OPTIMAL INVENTORY POLICY FOR THE MULTISOURCE ITEM

By

WOLTER JOSEPH FABRYCKY

Bachelor of Science
University of Wichita
Wichita, Kansas
1957

Master of Science
University of Arkansas
Fayetteville, Arkansas
1958

Submitted to the Faculty of the Graduate School
of the Oklahoma State University
in partial fulfillment of
the requirements for
the degree of
DOCTOR OF PHILOSOPHY
May, 1962

OPTIMAL INVENTORY POLICY FOR THE MULTISOURCE ITEM

Thesis Approved:

H J Bentley
Thesis Adviser

W R Thurgen

Paul E Torgersen

Thomas C Mayberry

Robert D Morrison

Dean of the Graduate School

PREFACE

This investigation will be based upon the supposition that any item is available from more than one source. It will be shown that, by considering the item in this multi-source context, inventory theory can be generalized to include source parameters and, as a result, inventory policy can be extended to include source decisions.

Therefore, the primary objective of this dissertation will be to present a generalized approach to the inventory problem, embracing the multisource item concept, that will yield optimal inventory policy. Chapters II through VII will be devoted exclusively to this purpose. Chapter VIII will illustrate the application of the scheme to the determination of optimal inventory policy in the static as well as the dynamic environment. Variations and extensions of the concept will not be discussed in these chapters, but will be reserved for the concluding section of Chapter IX. Chapter I will review the literature and present the intended contributions of this research.

A four-section Appendix, comprising a digital computer algorithm, contains material in support of the concept under development. Each section contains a computer program, the program input, and the program output. Although these

programs make up the heart of the algorithm they are not to be considered an end in themselves, but rather are intended to detail the vital facets of a computational scheme which, in turn, are intended to describe the multisource item concept. A thorough and complete understanding of the concept, in all of its detail, requires close study of the Appendix material which, in turn, requires familiarity with digital computer programming. Understanding of the concept in general terms may be had by study of the text material only. This will require reference to the Appendixes only as directed and does not presuppose familiarity with computers and computer programming. However, before progressing to the text material, it is suggested that the reader study the Foreword to the Appendixes.

Interest in this area of decision making began in the Summer of 1960 when the writer was associated with the Operations Analysis Office at Headquarters, Oklahoma City Air Materiel Area. Investigation of the remanufacture and buy source alternatives was undertaken with the objective in mind of quantifying this decision area. The resulting paper, Repair-Salvage Decision Criteria for the Reparable Item, published by that office, failed to do more than define the problem and outline decision criteria. The concept under development in the present investigation should serve to satisfactorily complete this work.

It is a pleasure, at this point, to acknowledge indebtedness to the Ethyl Corporation for granting the

fellowship that made this research and the previous course work possible. This fellowship was administered jointly by the Ethyl Corporation Scholarship and Fellowship Committee, under Mr. T. J. Carron, and the School of Industrial Engineering and Management, under Professor W. J. Bentley. In this connection, credit is due Mr. E. A. Acker, of the Ethyl Corporation Baton Rouge Plant, for making available a six-week appointment in his Management Systems Group which allowed work and study in the area of this investigation.

Indebtedness is acknowledged to the administration of the Oklahoma State University for making available an excellent Computing Center, equipped with an International Business Machines Type 650 Magnetic Drum Data Processing Machine which made this research feasible. Professor W. Granet, Mrs. Cassie Spencer, and Mr. G. Pulley, of the Computing Center staff, deserve mention for excellent cooperation during the year that development and testing of this algorithm was in progress.

Finally, the members of my Advisory Committee: Professors W. J. Bentley, T. C. Mayberry, R. D. Morrison, H. G. Thuesen, and P. E. Torgersen, deserve special credit for guiding my doctoral program and this investigation. Special thanks is due each of them for creating an atmosphere of inspiration and encouragement.

Wolter Joseph Fabrycky

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The inventory problem, as considered in this dissertation, may be described as follows. A stock of a certain item is maintained to meet a demand. When the number of these items falls to a predetermined level, action is initiated to procure a replenishment quantity from one of several possible sources. The objective is to determine the procurement level, the procurement quantity, and the procurement source in the light of the relevant costs and the statistical properties of demand and lead time, so that the probability of minimizing the sum of all costs associated with the inventory process will be maximized.

Existing Specific Solutions

Effective solutions to specific segments of the problem outlined above exist, and the less complicated of these are used extensively in the determination of inventory policy. Whitin (1), in his book, The Theory of Inventory Management, gives an excellent account of the state of the art up to about 1957.

Recognition of the necessity to improve procurement quantity decisions has existed for quite some time. As far

back as 1915, Harris (2) developed an economic lot size equation which minimized the sum of inventory holding cost and procurement cost for the case where demand is known and constant. Thuesen (3) presents a modern derivation of this relationship and a modification of it that takes into consideration the holding cost of work in process if the item is being manufactured. Churchman, Ackoff, and Arnoff (4) present further evolutionary forms of this basic equation that extend its application to cases where demand is a random variable, where item cost is variable, and where aggregate inventory restrictions exist.

Decisions concerning the procurement level are usually made by taking the product of the expected demand and the expected lead time plus a safety quantity. This safety amount is usually expressed as a simple function of the expected use during the lead time, such as a percentage or square root. (1)(4)(5)(6). Recently, several investigators have explored statistical methods for setting the procurement level by considering the statistical distributions of demand and lead time. The writer developed a digital computer solution based on the Monte Carlo principle. (7). Ekey, Talbird, and Newberry (8) present an approach using joint probability distribution theory. Fetter and Dalleck (9) give a multinomial expansion scheme useful where the distribution form is empirical. Harling and Bramson (10) developed several numerical methods suitable for hand computation.

Decisions pertaining to the procurement source usually involve comparison of candidate sources on the basis of item cost. (3). The most common and well known of these involve manufacture and buy alternatives. The writer attempted, without success, to identify the source decision of remanufacture or buy with the theory of inventory. (11). The fact that inventory theory, if generalized to include source parameters, can be used to make source decisions has not been recognized in the literature.

The techniques referenced in the previous paragraphs have two serious deficiencies. First, they exhibit solutions to specific segments of the inventory problem, and, as a result, fail to present a unified concept embracing all pertinent facets of inventory phenomena. The most serious deficiencies in this regard are the numerous simplifying assumptions. Second, the independent determination of the procurement level and the procurement quantity will not, in general, lead to an optimum solution. However, with the exception of the recent statistical approaches to the determination of the procurement level, these techniques are simple to use and are easily understood. This may be verified by noting their widespread application in the determination of inventory policy. (1).

Existing General Solutions

In recent years, increased interest in inventory phenomena has resulted in the publication of many excellent

general solutions. While most of these are restricted in application, they do, for the most part, yield optimum results. Arrow, Karlin, and Scarf (12) published an edited collection of papers prepared primarily at Stanford and the RAND Corporation. Involving models of the purely symbolic type, these papers, in the aggregate, cover a wide range of inventory situations. A comprehensive bibliography, given at the end of the text, is intended to supplement the excellent bibliography given by Whitin (1).

Probably the most comprehensive work in the inventory area was done by Dvoretzky, Kiefer, and Wolfwitz (13). Their article was generalized to include lead time as a random variable, simultaneous demands for several items, interdependence of demand in the various time periods, and cases where the distribution of demand is not completely known. This research pointed out that inventory policy based upon the independent selection of the procurement level and procurement quantity is not necessarily optimal. This paper was followed by another which indicated precisely the conditions required for optimality. (14).

In 1960, the work of Holt, Modigliani, Muth, and Simon (15) appeared in book form. The highly mathematical approach of Dvoretzky, et al. (13)(14) was avoided. In addition, many excellent applications and case studies are presented. In the opinion of the writer, this work represents the most significant contribution to date in inventory theory. A somewhat more elementary text by Fetter and

CHAPTER II

THE MULTISOURCE ITEM

The primary objective of an inventory system is to maintain sufficient stock on hand to meet demand. The basic supposition of this investigation allows stock replenishment to be made by procurement from one of several possible sources. Therefore, an important facet of the inventory problem involves a choice of the source that will effect minimum total system cost. It will be the purpose of this chapter to describe the characteristics of alternative source possibilities and to indicate their relationship to the inventory problem. Finally, the meaning of the phrase "optimal inventory policy" will be given.

The Purchase Alternative

A multisource inventory system is represented schematically by Figure 1. It exists as a result of the demand stimulus D. In satisfying this demand, the supplier finds it necessary to replenish his stocks periodically in order to maintain an operating system. Of the replenishment sources that exist, purchasing may be one. Actually, several vendors, represented by A, B, ..., N in Figure 1, may come under consideration.

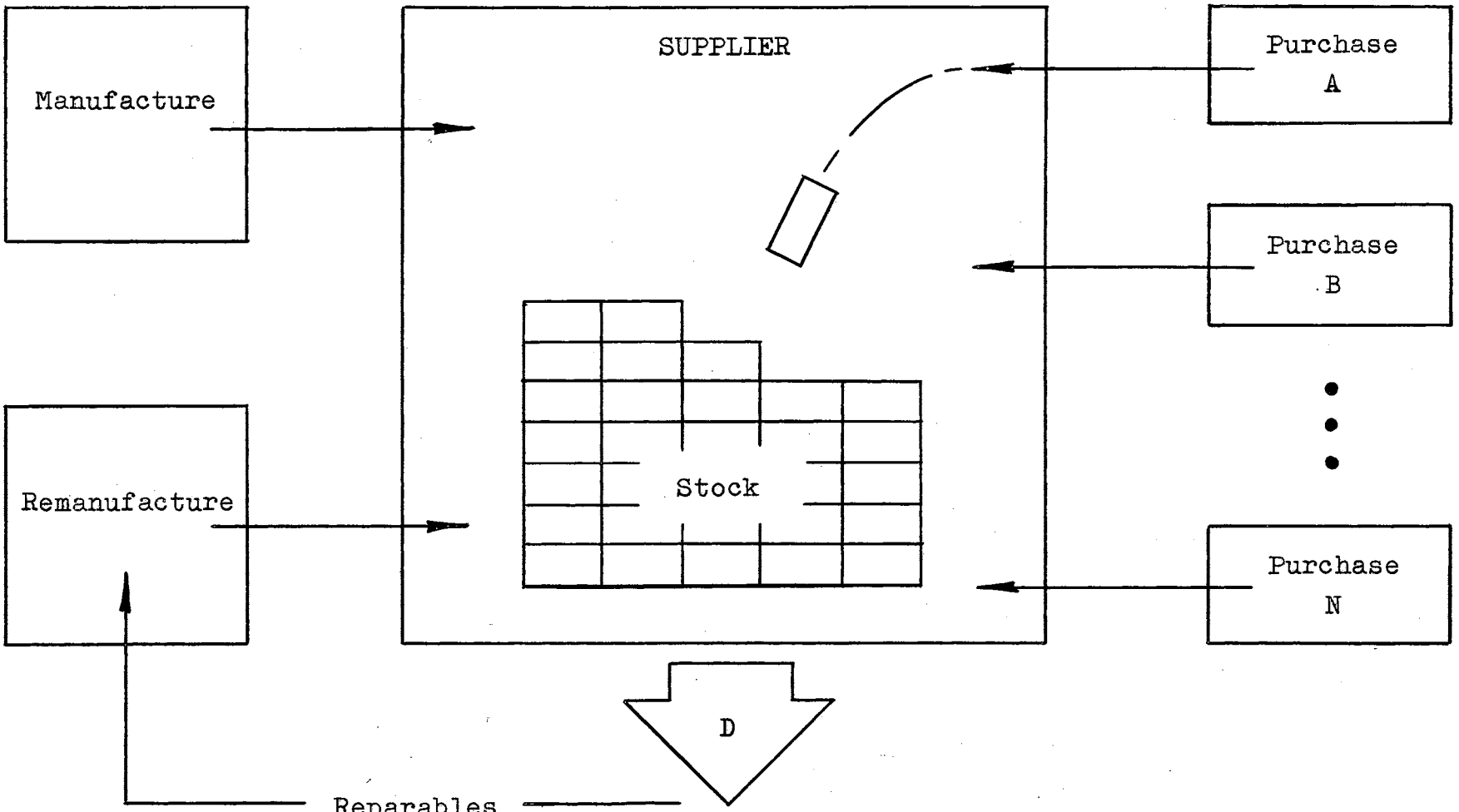


Figure 1. The Multisource Inventory System

Associated with each vendor will be a certain lead time capability. Order writing time, order processing time, order filling time, transportation time, and other time elements combine to constitute the lead time characteristic. Random and trend variations may be expected to operate on these time elements in such a manner that make it unlikely that lead time can be considered to be constant. Lead time, in its general context, will be taken as a random variable obeying a statistical distribution with parameters changing over time. Since lead time is a vital component of the inventory problem, and since alternate vendors are unlikely to exhibit identical lead time characteristics, this element gives the first indication of the relationship between source decisions and the inventory problem.

Item cost for the purchase alternative will be a function of the vendor chosen. In addition to differing unit price, it is unlikely that each vendor will quote an identical price discount schedule for the consideration of the supplier.

Another cost element that will be a function of the vendor chosen is the procurement cost. Broadly speaking, the cost of the procurement function is under consideration here. As in the case of the lead time element, item cost and procurement cost are not likely to be the same for all vendors. Since these costs are components of the inventory problem as well as components in the source decision,

this is further indication that inventory theory should embrace source parameters.

An important variation of the purchase alternative is the intrafirm transfer of stock. This alternative exists when two or more suppliers, who are members of the same organization, stock and supply the item under consideration. As an example, consider two air bases under the Strategic Air Command, each stocking an identical item for maintenance of assigned aircraft. Item transfer between bases will incur lead time and cost elements in a manner analogous to purchase from an outside vendor, and might well be the least cost alternative in specific instances.

The Manufacture Alternative

As an alternative to purchasing, the supplier may want to consider manufacturing the item for which he is experiencing a demand. This alternative and its variation, remanufacturing, is shown in Figure 1 (page 8). Associated with the manufacturing facility will be a certain lead time capability. Although manufacturing lead times may be more easily controlled than purchase lead times, they may be expected to differ from the latter.

Item cost for the manufacturing alternative involves a summation of the costs of direct labor, direct material, and factory burden. In addition, manufacturing progress or learning will be experienced resulting in a reduction in the number of direct labor hours per item as the number of

units produced increases. This phenomenon brings about a corresponding reduction in item cost and, as such, is analogous to the quantity discount schedule considered in the purchase alternative.

An important variation of the manufacture alternative is the possibility of remanufacturing the item. Required here is a one for one exchange of reparables for serviceables which take the place, in part, of the direct material item mentioned above. Lead time and cost elements for this alternative will have characteristics paralleling those for the manufacturing alternative. Also, it should be noted that these elements are part of the inventory problem as well as part of the criteria considered when making source decisions. Again, the relationship between inventory theory and source decisions is indicated.

Optimal Inventory Policy

The source alternatives discussed in the previous sections make up a source environment in which the multisource inventory item will have its genesis. The supplier will need to make inventory policy decisions that take into consideration this source environment if he is to effect minimum total system cost. Inventory policy for the multisource item, then, will be that policy stating:

(1) WHEN to procure (PL)

(2) HOW MUCH to procure (PQ)

(3) FROM WHAT SOURCE to procure (PS).

Optimal inventory policy for the multisource item will be that inventory policy resulting in maximization of the probability of minimizing the sum of all costs associated with the inventory process.

The inventory item, if restricted to only one source possibility by the specifications of the demand, will be called a unisource inventory item. Inventory policy for the special case of the unisource item, then, will be that policy stating:

(1) WHEN to procure (PL)

(2) HOW MUCH to procure (PQ)

with the source being fixed by restriction. Optimal inventory policy for the unisource item may be found by use of the multisource item concept under development here, and takes on the same meaning as for the more general multisource case.

CHAPTER III

INPUT DISTRIBUTIONS AND COSTS

Determination of the optimal inventory policy for a given item is contingent upon the availability of reasonably accurate input data. This chapter will be devoted to a discussion of the inputs needed by the algorithm and how they may be determined. It will be readily recognized that accurate determination of certain cost and distribution elements will be difficult. However, this does not void the usefulness of an integrated computational scheme requiring these input elements. Availability of the algorithm will encourage the evolution of increasingly accurate methods of estimation. Also, the scheme is useful in itself in that it presents a unified approach to the inventory problem detailing all facets that must be considered in decision making.

The Distribution of Demand

Demand is the primary stimulus on an inventory system and the justification for its existence. Specifically, an inventory system may exist to meet the demand of customers, the spare parts demand of an operational weapons system, the demand of the next step in a manufacturing process,

etc. The characteristics of demand, while independent of the source of the item, will depend upon the nature of the system giving rise to demand.

This investigation considers demand as a random variable to be the rule rather than the exception. Demand that is constant will be regarded as a special case; that is, occurring from an underlying statistical distribution with a variance of zero. Estimation of demand characteristics, then, involves determination of the form and the parameters of the underlying distribution at any point in time. A demand distribution whose form and parameters do not change over time will be regarded as a special "steady state" case.

Studies directed toward the determination of demand characteristics are numerous. (9)(10)(12)(15)(17)(18)(19). Both the form and the parameters of the demand distribution have been investigated. It is generally agreed that the method of maximum likelihood, together with a weighting scheme, such as is presented by Brown (20), is the most satisfactory for parameter estimation. Estimation of the form of the underlying distribution is usually accomplished by comparing sets of observed and expected frequencies using the well known chi-square test. The most frequently used distribution to represent demand is the Poisson, probably because of convenience. However, it has been shown by Ferguson and Fisher (19), that stockage policy is insensitive to the form of the demand distribution chosen.

The algorithm under development in this treatise will accept distributions of demand obeying any known theoretical form. If the distribution experienced cannot be accurately represented by a theoretical distribution, a method for using the empirical data is given. The specific example presented in this study uses the Poisson distribution to represent demand. The symbolism DSUBM and DSUBV is used to represent the mean and variance, respectively, of the demand distribution. DSUBX is used to denote the demand random variable, discrete in value, and falling in the range $0 \leq \text{DSUBX} \leq \infty$.

The Distribution of Lead Time

Lead time, representing the elapsed time from the initiation of procurement action to the receipt of stock, is a source dependent input. The nature of the dependence of lead time upon the source was discussed in the previous chapter. As in the case of demand, lead time will be considered, in its general context, to be a random variable occurring from a statistical distribution with its parameters changing over time. Lead time that is constant will be regarded as a special case; that is, occurring from an underlying distribution with variance of zero.

Estimation of lead time characteristics involves determination of the form and the parameters of the underlying distribution for each source alternative at any point in time. Lead time, considered as a random variable, has

occurred only recently and investigations of lead time characteristics are few. (9)(10)(15). However, it is agreed that the proper approach involves the methods of maximum likelihood for parameter estimation and chi-square tests for the determination of distribution form. As in the case of demand, the choice of the form of the lead time distribution is usually based upon convenience. The writer has a strong feeling that the lognormal distribution will find widespread application as a model to represent lead time characteristics. This feeling developed through study of Aitchison and Brown (21) and from chi-square curve fitting studies performed at Headquarters, Oklahoma City Air Materiel Area.

The algorithm under development will accept distributions of lead time that obey any theoretical or empirical distribution. However, the specific example presented in this treatise will make use of the lognormal distribution to represent the lead time random variable. The symbolism LSUBM and LSUBV is used to represent the mean and variance, respectively, of the lead time distribution. LSUBX will be used to denote the lead time random variable, made discrete in value, and falling in the range $0 < \text{LSUBX} \leq \infty$.

Item Cost

Item cost, representing the dollar value attached to the item, is another source dependent input to the algorithm. In the case of the purchase alternative, item cost

will simply be the price quoted by the alternate vendors plus other relevant charges. In addition, each vendor may offer quantity discounts, thus making price a function of both the vendor chosen and the procurement quantity. The vendor not offering a quantity discount schedule will be regarded as a special case; that is, as offering one price break, with the break covering a procurement quantity from 0 to ∞ items at the price quoted.

The symbol, ic, will be used to represent item cost. Specthrie (22) gives an account of its elements. Let:

a = the price quoted for the quantity considered

b = the tax, duty, and similar charges

c = the crating and shipping charge

o = other charges applicable to item cost.

For the purchase alternative, compute item cost for each candidate vendor as:

$$ic = a + b + c + o. \qquad (3.1)$$

For the manufacturing alternative, item cost will be composed of purchase costs plus fabricating expense. (22). It comprises the three distinct cost elements of direct labor, direct material, and factory burden. Direct material comprises the substance from which the item is made. It consists of all purchased items and raw material conveniently allocable to the specific lot being manufactured. For the remanufacture alternative, the cost of reparable items falls into this category. Direct labor consists of those labor charges conveniently identified with the

specific lot. Factory burden comprises all manufacturing costs other than direct material and direct labor. The more important items of factory burden are indirect material, indirect labor, taxes, depreciation, insurance, power, maintenance, supervision, and others.

In addition, the manufacturing process creates three distinct inventories. (22). These are: the materials inventory, the work in process inventory, and the finished goods inventory. The latter inventory is the subject matter of this dissertation and its holding cost will be considered in a subsequent section. The holding cost of the materials and the work in process inventory will, for this investigation, be considered as a part of factory burden. Factory burden, then, will accept all holding charges arising from these inventories and, when a specific lot is completed and moved into the finished goods warehouse, these charges will be reflected in item cost through burden application.

Somewhat analogous to quantity discount schedules for purchased items is the manufacturing progress or learning function for the manufactured or remanufactured item. Assume that the following is the relationship of the learning process:

> As the quantity of items produced is doubled, the number of direct labor hours required to produce each of these items will be reduced by a constant percentage.

Torgersen (23) derives the applicable relationship and gives the function as:

$$L_x = K(x)^n \text{ where } n = \log \varphi / \log 2. \qquad (3.2)$$

L_x = number of direct labor hours required to produce the x^{th} item.

K = number of direct labor hours required to produce the initial item.

x = the item number.

φ = the per cent improvement expressed in decimal form.

If the production is intermittent, as in this case, a modification is necessary. If N stands for the total number of items produced in all lots previous to the current lot, and the effect of the discontinuous nature of the process on learning is neglected, the modification is:

$$L_x = K(N + x)^n . \qquad (3.3)$$

If PQ stands for the procurement quantity (lot size), then the total number of direct labor hours for the lot will be:

$$T = L_1 + L_2 + \ldots + L_{PQ} = \sum_{x=1}^{PQ} L_x . \qquad (3.4)$$

And the average number of direct labor hours per item in the lot is:

$$\bar{L} = \sum_{x=1}^{PQ} L_x/PQ \, . \qquad (3.5)$$

For computation of the item cost under the manufacturing or the remanufacturing alternative, let:

lr = the direct labor hourly rate.

dm = the direct material cost per item.

fb = the factory burden rate expressed as a percentage of the direct labor rate.

For these alternatives, then, compute item cost as follows:

$$ic = \bar{L}(lr) + dm + \bar{L}(lr)(fb) \, . \qquad (3.6)$$

Procurement Cost

Another source dependent input, procurement cost represents the cost incurred in the procurement function per procurement. Specifically for the purchase alternative, let:

a = the cost involved in ordering or contracting.

b = the cost associated with necessary paperwork.

c = the cost of communication and follow up.

d = the cost of receiving, inspection, and storage.

e = the cost of processing the invoice for payment.

o = other costs applicable to the procurement function.

For the purchase alternative, compute procurement cost for

each candidate vendor as:

$$pc = a + b + c + d + e + o. \tag{3.7}$$

For the manufacturing alternative, procurement cost will be composed of cost elements applicable to planning and initiating the production run. For manufacturing or remanufacturing, let:

a = the cost involved in production and process planning.
b = the cost associated with the necessary paperwork.
c = the cost involved in set up.
d = the cost involved in inspection and storage.
e = the cost of the cost accounting function.
o = other costs applicable to initiating the production run.

For the manufacturing or remanufacturing alternative, compute procurement cost as:

$$pc = a + b + c + d + e + o. \tag{3.8}$$

Holding Cost

Inventory holding costs are incurred as a function of the quantity on hand and the time duration involved. The costs are independent of the source of the item with its most common range being from 16 to 24 per cent per year. (1). Let the yearly cost categories be:

a = the cost of stores manpower.

b = the cost of building and equipment maintenance.

c = the cost of taxes and insurance.

d = the cost of depreciation.

e = the cost of obsolescence.

f = the cost of interest on invested capital.

o = other costs applicable to holding stock.

Cost elements a and b should be calculated on the basis of inventory turnover in the year so as to reflect the effect of the volume of business handled by the warehouse. All others may be calculated on the basis of average inventory during the year. Calculate the yearly holding cost rate as:

$$hc = \frac{a + b}{\$ \text{ stock withdrawals}} + \frac{c + d + e + f + o}{\$ \text{ average inventory}} . \quad (3.9)$$

Shortage Cost

Shortage cost is the penalty incurred for being unable to meet a demand when it occurs. The cost will be a function of the number of shortages, with the shortage cost expressed on a per item basis. The components making up this input element will depend upon the system giving rise to the demand but will be independent of the procurement source. Its components are:

a = the cost of lost profit and goodwill if the demand is of customers.

b = the cost of lost time and production if the demand is of maintenance crews.

c = the cost of an inoperable weapons system if the demand is for spare parts.

d = the cost of idle facilities if the demand is from the next step in a manufacturing process.

o = other costs arising from the shortage condition.

Compute the shortage cost per shortage as:

$$sc = a + b + c + d + o. \tag{3.10}$$

Of the cost inputs developed in this chapter, shortage cost is probably the most difficult to estimate. However, it is unlikely that an alternate estimate, such as the probability of a shortage, would be more appropriate in the determination of inventory policy.

CHAPTER IV

INVENTORY FLOW SIMULATION

The algorithm under development can be accepted as valid only if it succeeds in accurately representing the inventory system being studied. Therefore, this chapter will assume the task of simulating inventory flow for the purpose of describing, in detail, the nature of the inventory process. This does not mean that the simulated process exactly parallels the real world system that it patterns. The simulation never deviates from the rules. It always follows them to the letter, while in the real world such compliance will not occur. Nevertheless, as will be seen later, the simulation scheme provides a useful standard against which the validity of the various components and final results of the algorithm can be checked.

Definitions and Rules

The inventory process involves two basic time elements, illustrated by Figure 2 and defined as follows:

(1) Period - the element of elapsed time between review of the stock position. This is usually a day but it may be any other time unit. A constant.

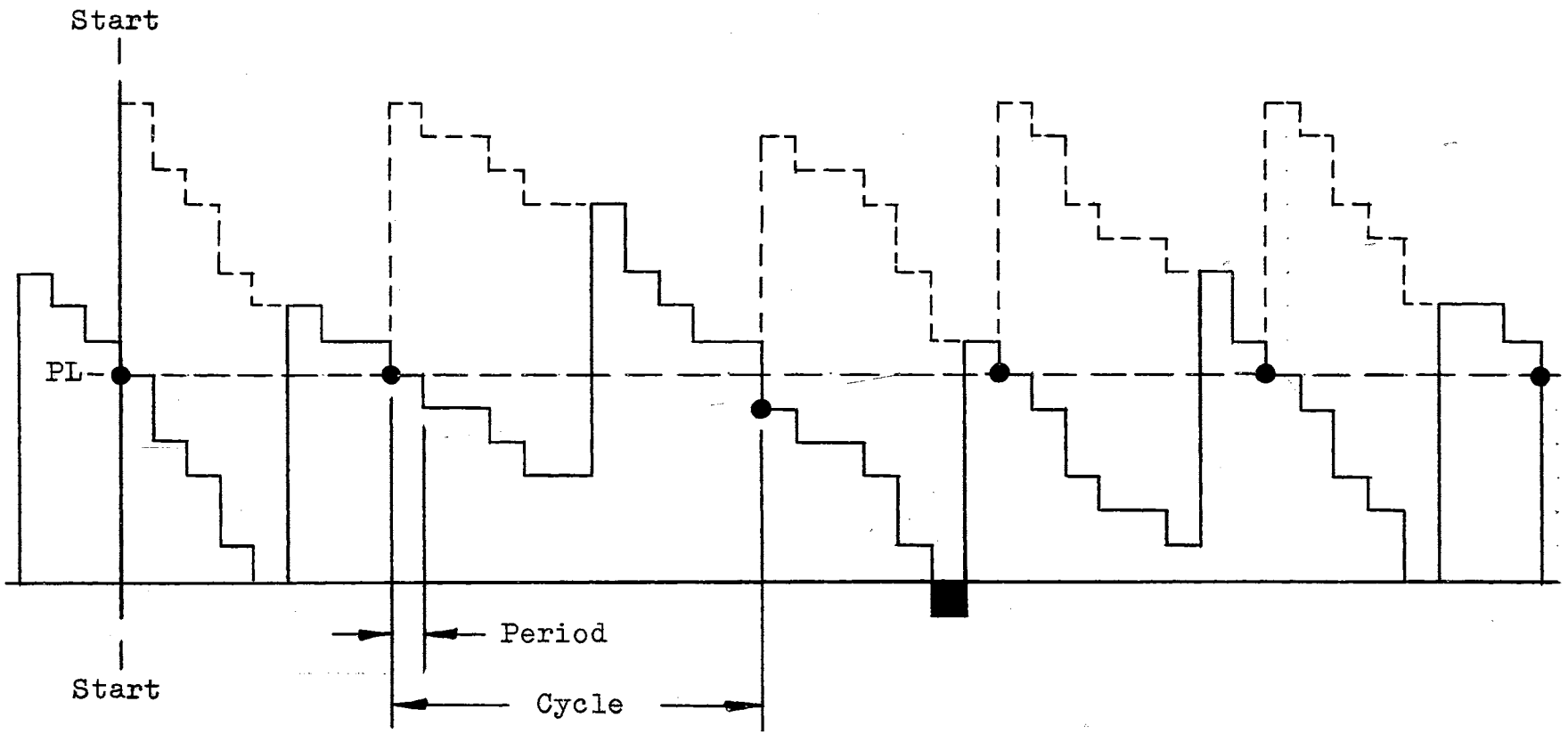


Figure 2. Inventory Flow

(2) Cycle - the number of periods occurring between successive procurement action. A random variable.

The inventory process, as it appears to the bookkeeping system, is shown in Figure 2 (page 25). Stock level review and adjustment occurs at the end of each period resulting in the step function shown. The stock level at the end of one period is equal to the stock level at the beginning of the next. In this context, the inventory system is periodically reviewed as opposed to a theoretical continuous review system.

The procurement level is shown in Figure 2 (page 25). When the stock on hand (solid line) plus the stock on order (dashed line) falls to or below the procurement level action is initiated for a procurement quantity from one of the possible procurement sources. Initiation of procurement action, when the stock level is below the procurement level, is due primarily to the periodic review of the system. The procurement quantity is added to the amount on order at the instant procurement action is initiated. When a lead time is up, the procurement quantity received is added to the amount on hand and subtracted from the amount on order. Period demands bring about a reduction in the amount on hand and result in a negative stock level in an amount equal to the number of shortages, if any. Such shortages are satisfied out of the next shipment before its quantity is added to the amount on hand.

Input Distributions and Costs

Appendix A, composed of three parts, will be the subject of discussion for the remainder of this chapter. Its first part, Appendix A-1, will be considered in this section. Appendix A-2 and A-3 will be discussed in the two sections which follow.

Required by the computer program of Appendix A-2 is the input data of Appendix A-1. Specifically, this includes distributions of demand, distributions of lead time, a minus one card, a distribution identification card, and a rule and cost card. Exhibited first is the group of Poisson demand distributions used in this investigation. Each was developed by summing the probabilities tabulated by Molina (26). Columns 5 through 10 correspond to these cumulative probability values and constitute the argument. The function associated with each argument is given in columns 11 through 14. Columns 1 through 4 give the computer address into which the argument and function are stored. The format exhibited corresponds to that required by the table look up feature of the IBM 650 computer. A given distribution is made available to the computer program of Appendix A-2 by punching it into one word load cards in the standard manner.

Given next is the group of lognormal lead time distributions used in this investigation. The procedure involved in their development was lengthy, involving logarithmic transformation of the lead time variable,

conversion to a standard normal variable, assignment of normal curve probabilities, and cumulative summation of these probabilities to yield the distributions shown. To insure accuracy, these steps were performed by a series of computer programs and the normal curve probabilities were assigned from a very complete table. (25). The non-integral values exhibited for the means of these distributions are the result of a shift due to the process of making a continuous skewed distribution discrete. The columnar format of these distributions is the same as for the demand distributions discussed in the previous paragraph. These lead time distributions are made available to the program by the same load card procedure as for the demand distributions.

Exhibited last is the format and data required for the minus one card, the distribution identification card, and the rule and cost card. The minus one card is used by the program to set a block of eight storage locations to minus one. The need for this initial condition will be discussed in the next section.

The distribution identification card contains distribution parameters and constants required by the simulation program. The constants remain the same regardless of the demand and lead time distributions chosen. It is only necessary to enter the demand distribution mean and variance in words 2 and 3 and the lead time distribution mean and variance in words 7 and 8.

The last card required by the program is the rule and cost card. This card contains the decision variables and cost inputs under which the simulation process will operate. Word 1 and 2 contain the procurement level and procurement quantity, respectively. The procurement source is set by choice of the lead time and source dependent costs. Word number 3 contains zeros although it may contain any integral value and is used by the program to adjust the procurement level upward. This was done experimentally to study a possible solution to the bias occurring due to procurement action being initiated when the stock level is below the procurement level. This bias will be discussed more fully later.

Word 4 contains the amount of stock in the portion of the first cycle occurring before the procurement level (Figure 2, page 25), and is computed as:

$$\frac{2PL + PQ - DSUBM\ (LSUBM)}{2} \left[PQ - DSUBM\ (LSUBM)\right] . \quad (4.1)$$

This adjustment is needed because the simulation program begins at the procurement level of the first cycle and this first cycle residual stock would be neglected.

Words 5 through 8 contain the cost elements. Item cost is computed from Equation (3.1) or (3.6); procurement cost from Equation (3.7) or (3.8); the holding cost rate from Equation (3.9) divided by the number of periods per year; and the shortage cost from Equation (3.10). The

specific source chosen will determine the equation used for item cost and procurement cost.

Inventory Flow Simulation Program

The simulation program of Appendix A-2 was designed to simulate inventory flow for a wide range of input distributions, rules, and costs. Those exhibited in Appendix A-1 were used in the experimental investigations with this program and for the static and dynamic illustrations of Chapter VIII.

The simulation process begins with the initial stock on hand (QSUBI) and the initial stock on hand plus on order (TSUBI) equal to the procurement level (PL). This is the condition marked "start" in Figure 2 (page 25). Any residual stock chargeable to the first cycle is computed by Equation (4.1) and entered as an initial condition. At the beginning of each period, the program checks TSUBI against PL;(PL - TSUBI). If a plus value results, the procurement level has been reached or exceeded. Under this condition, TSUBI is increased by an amount equal to the procurement quantity (PQ). A random number is generated and converted to a value drawn at random from the lead time distribution. The resulting lead time value is stored in the minus one area reserved for all outstanding lead times.

If, when TSUBI is checked against PL, a minus condition results; a random number is generated and converted to a value drawn at random from the demand distribution.

This value, DSUBX, is subtracted from both TSUBI and QSUBI resulting in the end of period values TSUBF and QSUBF. Since one period has passed, 1 is added to the procurement frequency (PF) for the cycle, and 1 is subtracted from all outstanding lead times. Since the lead time area was initially set to minus one, only those locations into which lead time values have been stored have a chance of taking on a zero (lead time up) condition. When this zero condition occurs, an amount equal to PQ is added to the stock on hand and subtracted from the stock on order.

The amount of stock carried during the period is a function of the initial and final quantity on hand. Figure 3 shows the quantity carried as viewed by the warehouse if the values for QSUBI and QSUBF are positive.

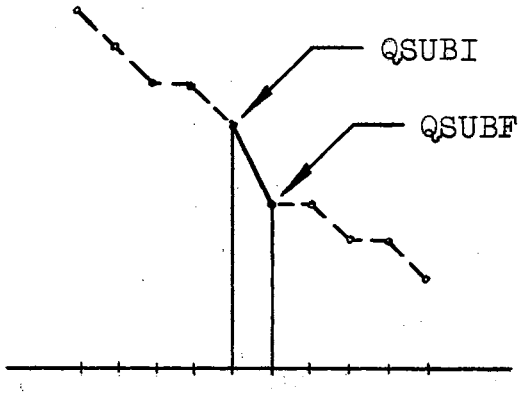


Figure 3. QSUBI and QSUBF Positive

Under the condition of Figure 3, the program computes the amount of stock carried in the warehouse for the period as:

$$\frac{QSUBI + QSUBF}{2} \qquad (4.2)$$

Figure 4 shows the quantity carried for the period if QSUBI is positive and QSUBF is zero or negative. If QSUBI is zero or negative, the period stock is zero.

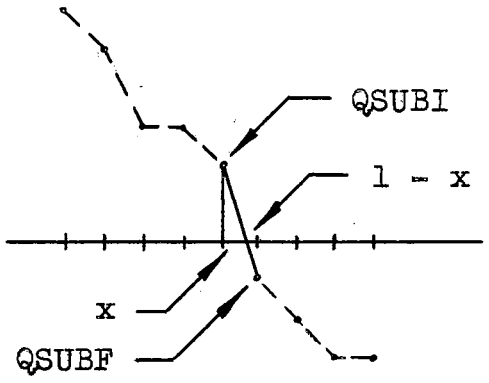


Figure 4. QSUBI Positive; QSUBF Zero or Negative

For the condition of Figure 4, the amount of stock carried is derived as follows:

$$QSUBI(1 - x) = -QSUBF(x)$$

or $$\frac{QSUBI}{x} = - \frac{QSUBF}{1-x}$$

from similar triangles, or:

$$\frac{1 - x}{x} = - \frac{QSUBF}{QSUBI} \quad ; \quad \frac{1}{x} = - \frac{QSUBF}{QSUBI} + 1$$

and

$$x = \frac{1}{- \frac{QSUBF}{QSUBI} + 1}$$

where the algebraic value of QSUBF is used. The stock carried for the period equals:

$$\frac{QSUBI\ (x)}{2} ,$$

or

$$\frac{QSUBI}{2} \left[\frac{1}{- \frac{QSUBF}{QSUBI} + 1} \right] = - \frac{QSUBI/2}{\frac{QSUBF}{QSUBI} + 1} . \qquad (4.3)$$

Note that the stock level is assumed to decrease linearly during the period in Figures 3 and 4 (pages 31 and 32). Contrast this with the end of period decrease in stock level shown in Figure 2 (page 25). The difference here is due to the fact that Figure 2 shows the inventory level as viewed by the bookkeeping system, whereas the stock level as viewed by the warehouse will, on the average, exhibit a linear decrease throughout the period. The stock carried in each period during the cycle is summed to

give the total stock carried for the cycle.

In addition to computing the procurement frequency (PF) and the total stock (TS) for the cycle, the program yields values for the final stock position (QSUBF) at the end of the cycle. If minus, this value represents the number of shortages and is recorded as such. The total cost (TC) of each cycle is computed from the cost inputs, the procurement frequency, the total stock, and the number of shortages.

The program will take care of any unusual situation due to the random nature of the process such as several outstanding lead times, reversal in time of incoming orders, simultaneous receipt of several orders, simultaneous receipt of stock and initiation of procurement action, and so forth. A complete understanding of the simulation scheme requires close study of the simulation diagram and simulation program of Appendix A-2.

Output Statistics

The inventory flow simulation program of Appendix A-2, briefly described in the previous section, utilizes inputs such as those of Appendix A-1 and yields the eight column output of Appendix A-3. Specifically, the output statistics of Appendix A-3 correspond to the following inputs:

(1) DSUBX $\sim$ Poisson [DSUBM = 1.00 : DSUBV = 1.00]

(2) LSUBX $\sim$ Lognormal

[LSUBM = 8.05 : V(LOG LSUBX) = 0.05]

(3) PL = 10, PQ = 16

(4) ic = $3.90, pc = $2.50, HC = .007, sc = $2.00.

After preparing the inputs per the requirements of Appendix A-1, the simulation package is assembled in the following order:

(1) drum zero cards

(2) inventory flow simulation program

(3) demand distribution

(4) lead time distribution

(5) transfer card (0301)

(6) minus one card

(7) distribution identification card

(8) rule and cost card.

After loading, the simulation process will begin. Eight values for each inventory cycle were printed by the IBM 407 printer in the format of Appendix A-3. The column to the far left designates the cycle number. Of the eight columns mentioned, columns 1, 3, 5, and 7 are random variables corresponding to the procurement frequency for the cycle, the total stock for the cycle, the final stock position at the end of the cycle, and the cycle total cost. Columns 2, 4, 6, and 8 are the running means for the corresponding random variable elements and are so designated.

For this example, the simulation process was terminated at 6000 cycles. Of this group, the first 250 and the last 250 are presented. Omitted to conserve space are

cycle numbers 251 through 5750. The 500 cycles shown are adequate to give a picture of the characteristics of the process and the convergence of the running means. In addition, the program punched a card for each cycle. The random variable data from words 1, 3, 5, and 7 was histogrammed and is presented in Figures 5, 6, 7, and 8. These histograms give a picture of the distribution of procurement frequency, the distribution of total stock, the distribution of the final stock position, and the distribution of the period total cost. The means of these distributions were entered from the final converged values (cycle 6000) of the simulation run.

Figures 5 through 8 exhibit the expected distributions and means (within sampling variation) for an inventory process operating under the input distributions, rules, and costs described. Although the distributions are of value only in that they show the stochastic nature of the inventory process being studied, their means will be used as a standard against which the validity of the derivations which follow can be checked.

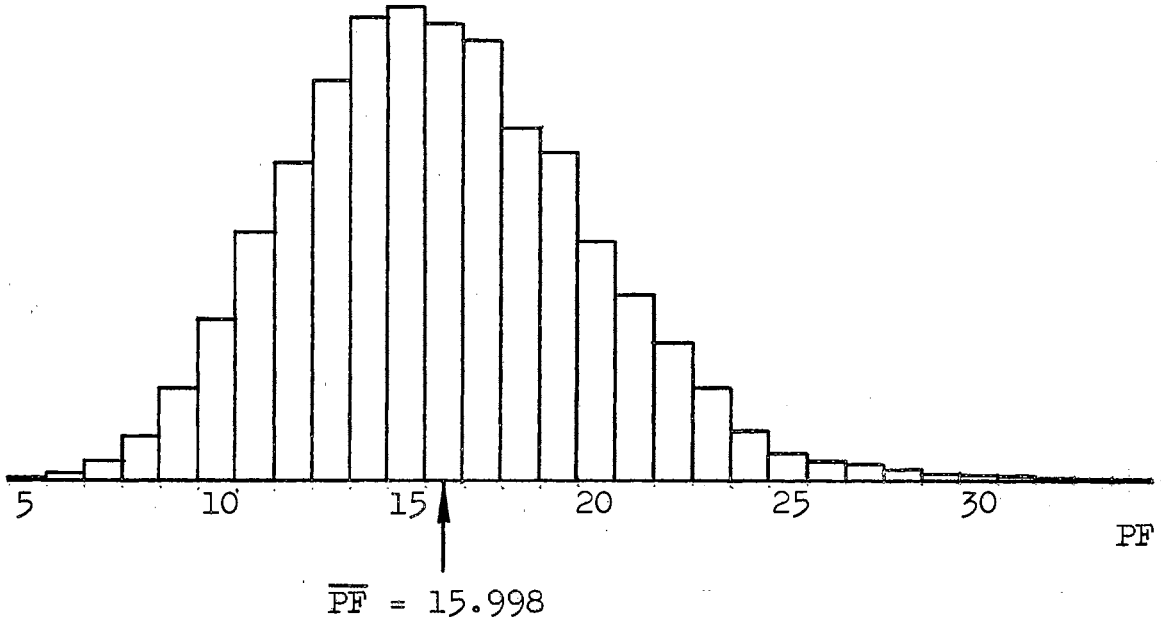


Figure 5. Procurement Frequency Distribution

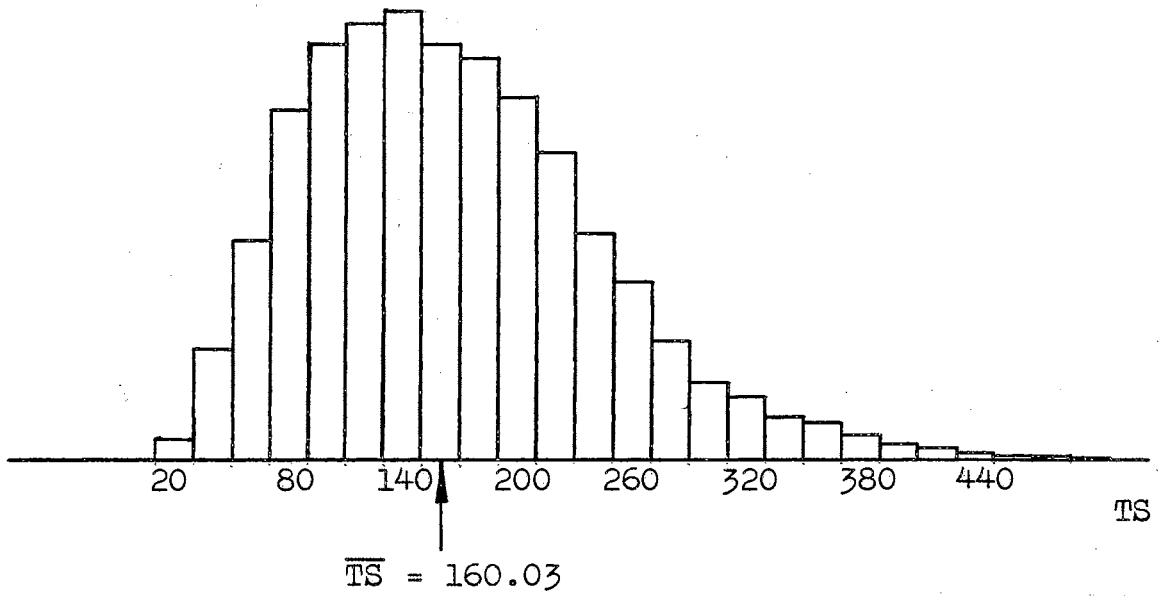


Figure 6. Total Stock Distribution

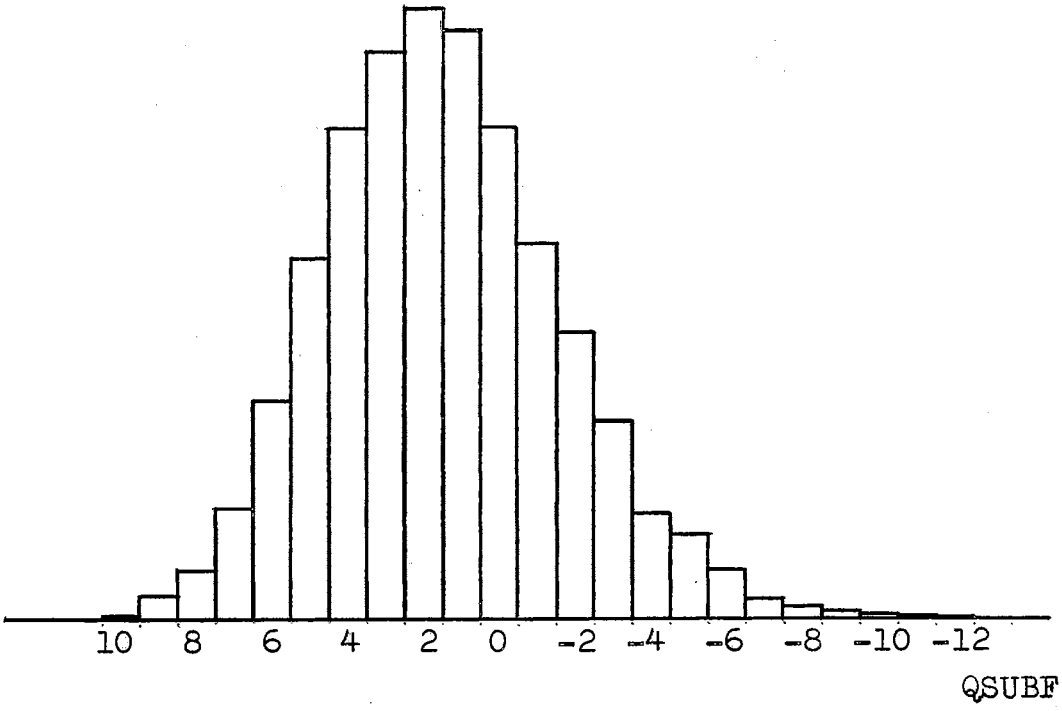
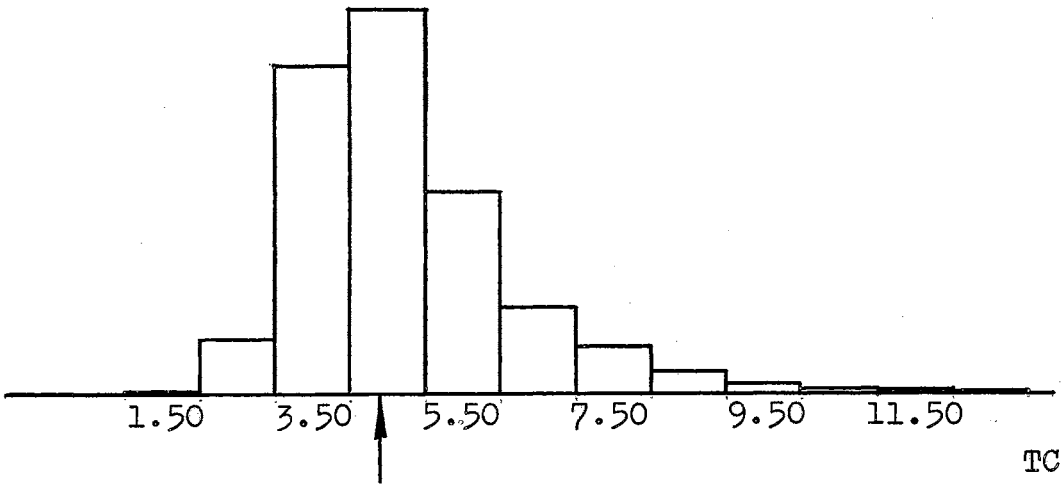


Figure 7. QSUBF Distribution



$\overline{TC} = 4.41$

Figure 8. Total Cost Distribution

CHAPTER V

INVENTORY SYSTEM RELATIONSHIPS

The simulation process of the previous chapter completely described the inventory system under study. Conceivably, the simulation method could be used to find the optimal inventory policy. By a persistent series of trials, the procurement level and procurement quantity combination resulting in a minimum total cost, for each possible procurement source, might be found. Obviously, this method is unsatisfactory. Therefore, the purpose of this chapter, and the one which follows, will be to develop expressions that approximate the expected procurement frequency, the expected total stock per cycle, and the expected number of shortages per cycle. These will be used in a subsequent chapter to derive, by direct means, the optimal inventory policy for an inventory system operating under any given set of input distributions, rules, and costs.

The PL - PQ Plane

The bounded plane of Figure 9 encompasses a region defined by $PL \geq 0$; $PQ \geq 1$. The area not considered may be subdivided into two regions as follows:

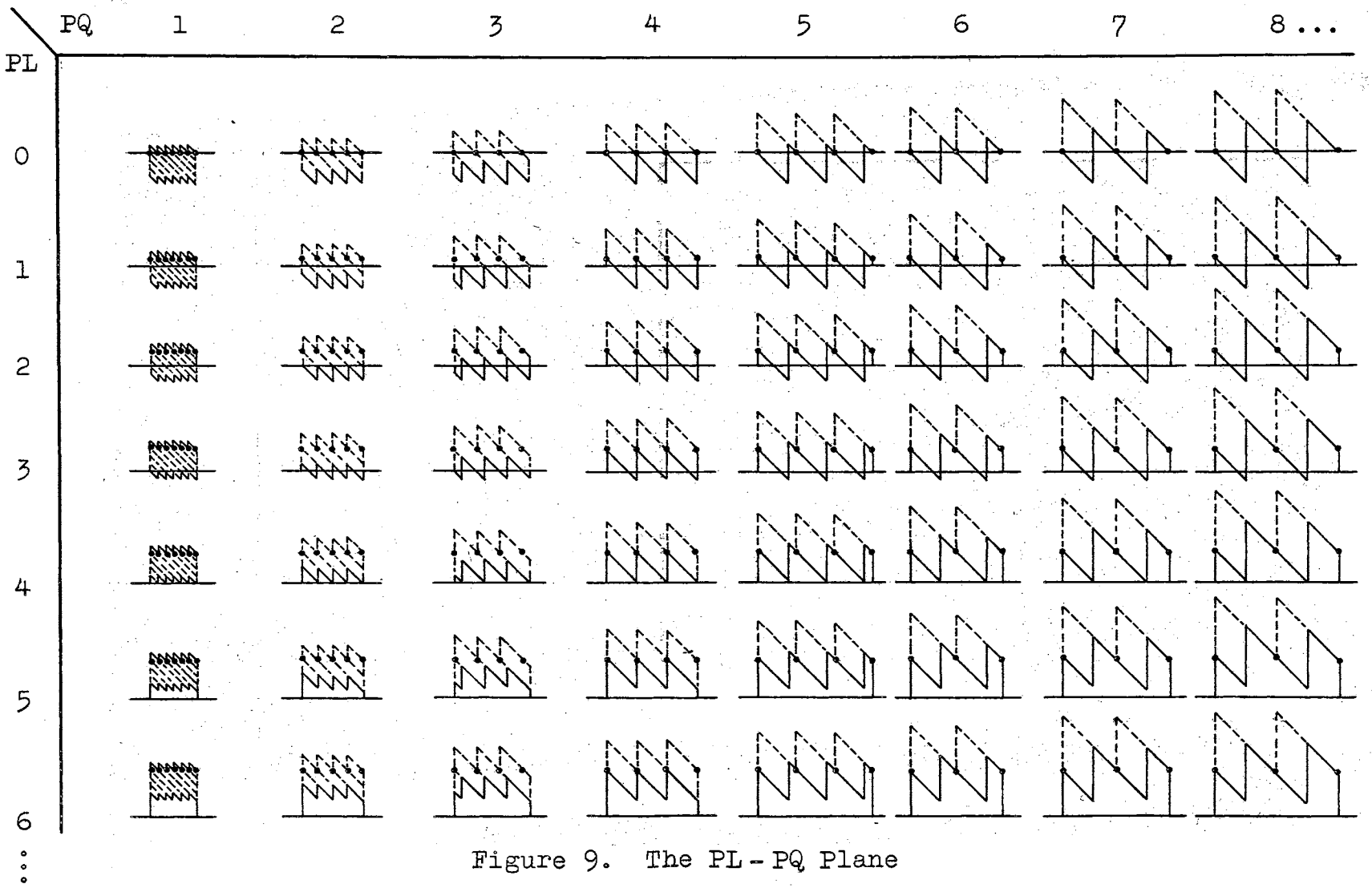


Figure 9. The PL - PQ Plane

(1) PQ < 1 - This region is not applicable to the inventory problem for procurement quantities of zero would result in extinction of the inventory process and negative procurement quantities have no meaning.

(2) PL < 0 ; PQ ≥ 1 - A PL - PQ point in this region involves logging unsatisfied demands (shortages) and initiating procurement action when their number reaches a predetermined negative procurement level. It is extremely unlikely that holding and shortage costs would take on the unusual values needed to cause the optimal inventory policy to take on a point in this region.

The region under consideration in this study, PL ≥ 0 ; PQ ≥ 1, may be subdivided into four areas as follows:

(1) PL ≥ QSUBM ; PQ ≥ QSUBM - An inventory system subject to normal values for the cost inputs will operate at minimum total cost within this region. Initiation of procurement action before the stock level drops below QSUBM for an amount equal to or greater than QSUBM is involved here.

(2) PL < QSUBM ; PQ ≥ QSUBM - This region allows initiation of procurement action when the stock level is below that required to meet QSUBM with the procurement quantity being equal to or

greater than QSUBM. High holding costs and/or low shortage costs might cause the optimal inventory policy to take on a PL - PQ point in this area.

(3) PL $\geq$ QSUBM ; PQ < QSUBM - An inventory system with a PL - PQ point in this region allows meeting QSUBM with the stock on hand at the time procurement action is initiated, but necessitates having more than one procurement request outstanding. This is necessary to prevent extinction of the inventory process due to the fact that any one procurement quantity is insufficient to meet QSUBM. High holding costs and/or low procurement costs might cause the optimal inventory policy to take on a point in this area.

(4) PL < QSUBM ; PQ < QSUBM - This region involves initiation of procurement action when the stock level is below that required to meet QSUBM for an amount less than QSUBM. It would take an unusual combination of low shortage cost, low procurement cost, and high holding cost to cause the optimal inventory policy to involve a PL - PQ point in this area.

Geometric Relationships

In addition to the forms of the input distributions,

six parameters are responsible for the geometry of an inventory process such as the one shown by Figure 2 (page 25). These are: DSUBM, DSUBV, LSUBM, LSUBV, PL, and PQ. The process was seen to be stochastic; that is, composed of random variables. This was evident from the random nature of Figure 2. However, the output statistics of the simulation process illustrated that the random elements have expected values that are approached as the number of cycles considered became large.

If the expected values of these random elements can be derived directly from the input parameters, without resorting to simulation, the task of finding the optimal inventory policy will be greatly simplified. Derivation of relationships that approximate the expected values of two of these random elements, the procurement frequency (PF), and the total cycle stock (TS) will be accomplished in this section and the one which follows. Derivation of a scheme for finding the expected number of shortages per cycle (SSUBM) will be deferred to the next chapter.

The sawtooth function at each PL - PQ point in Figure 9 (page 40) represents the inventory process as it would appear if the random elements were not present. Specifically, this figure represents the inventory process as it would appear for each of a wide range of PL - PQ choices and with DSUBM = 1, DSUBV = 0, LSUBM = 4, and V(LOG LSUBX) = 0. The slope of the line representing the decreasing stock position is the expected value of the demand

necessary for the derivations which follow. These segments, separated by the line PL = QSUBM, may be defined as $0 \leq PL < QSUBM$; $QSUBM \leq PL \leq \infty$. Figure 10 pictures the geometry of an inventory system with $0 \leq PL < QSUBM$.

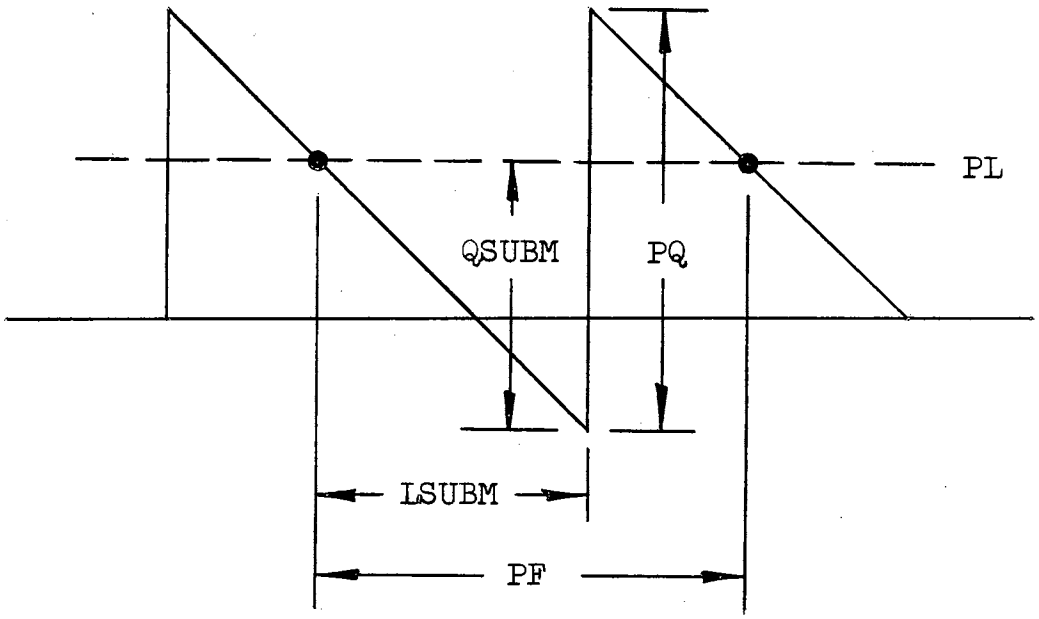


Figure 10. $0 \leq PL < QSUBM$

The expected procurement frequency may be derived as follows:

$$PF = LSUBM + \frac{PQ - QSUBM}{DSUBM} ,$$

but

$$QSUBM = (DSUBM)(LSUBM) ,$$

$$PF = LSUBM + \frac{PQ}{DSUBM} - \frac{DSUBM\ (LSUBM)}{DSUBM}$$

$$PF = \frac{PQ}{DSUBM} \ . \tag{5.1}$$

The expected total stock may be derived as follows:

$$TS = \frac{PL - QSUBM + PQ\left[\frac{PL - QSUBM + PQ}{DSUBM}\right]}{2}$$

$$= \frac{(PL + PQ - QSUBM)^2}{2\ DSUBM} \tag{5.2}$$

but if $$PL + PQ \leq QSUBM,$$

then $$TS = 0 \ . \tag{5.3}$$

Figure 11 pictures the geometry of an inventory system operating in the region $PL \geq QSUBM$.

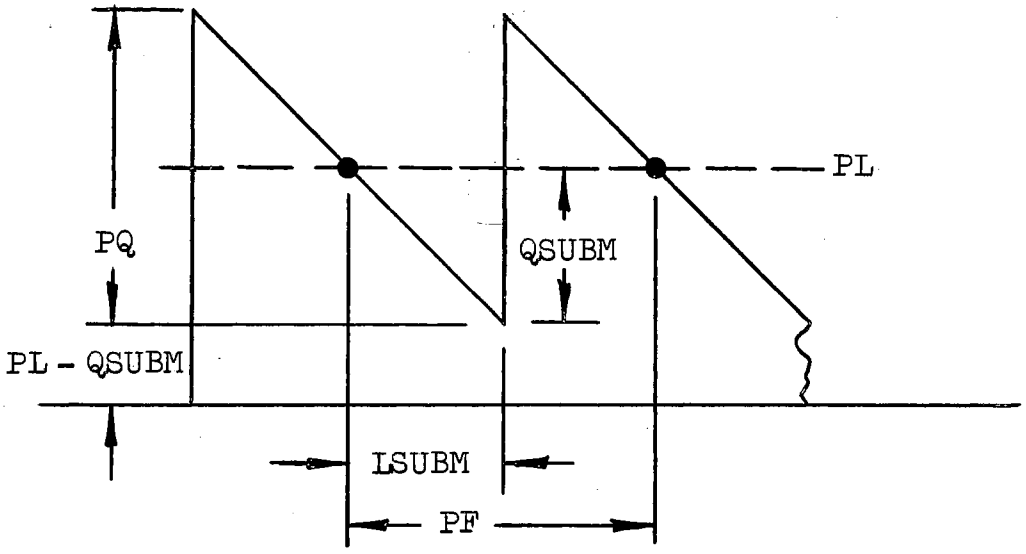


Figure 11. $QSUBM \leq PL \leq \infty$

The expected procurement frequency can be shown to be the same as for the previous case:

$$PF = LSUBM + \frac{PQ - QSUBM}{DSUBM} = \frac{PQ}{DSUBM} . \qquad (5.4)$$

The expected total cycle stock may be derived as follows:

$$TS = \frac{PQ}{DSUBM}\left[\frac{PQ}{2} + (PL - QSUBM)\right] . \qquad (5.5)$$

The validity of these derivations may be checked by substituting the values of DSUBM, LSUBM, PL, and PQ used in the simulation run of the previous chapter. Using Equation (5.4), the expected procurement frequency is:

$$PF = \frac{PQ}{DSUBM} = \frac{16}{1} = 16.000 .$$

The value found by simulation was found to be 15.998 and it may be concluded that 15.4 provides a very good means for arriving at a value for the expected procurement frequency. Similar excellent agreement between 5.4 and simulated values, plus intuitive considerations, lead to the conclusion that 5.4 yields an exact value for the procurement frequency; that is, it expresses PF without bias.

A value for the total stock is found by substituting into Equation (5.5). The result is:

$$TS = \frac{16}{1}\left[\frac{16}{2} + (10 - 8.05)\right] = 159.20.$$

The value obtained by simulation was found to be 160.03. Similar close agreement between Equation (5.5) and

simulated values, plus intuitive considerations, leads to the conclusion that Equation (5.5) yields only an approximation to the expected value of the total stock. First, this conclusion is supported by the fact that procurement action is initiated, on the average, at some value below the established procurement level due primarily to the periodic review of the system. This will cause a reduction of the stock level and, therefore, should yield a value for TS that is somewhat higher than the simulated value. Second, Equation (5.5) will yield a value for TS of zero for PL + PQ = QSUBM. This cannot be an unbias figure, for random variation in the slope of the demand line will cause the next shipment to create an on-hand balance. It must be concluded that, while Equation (5.5) yields a value that is close to the simulated value, it does not give a value that is unbias; it yields only an approximation.

CHAPTER VI

COMBINING DEMAND AND LEAD TIME

Expressions for the expected procurement frequency and for the expected total stock per cycle were developed in the previous chapter. Derivation of a third expression, the expected number of shortages per cycle, will be undertaken here. In the accomplishment of this task, development of the distribution of lead time demand will be an important intermediate step. The sections which follow will explore both mathematical and numerical methods for developing this distribution.

Mathematical Derivation of Lead Time Demand

Considerable effort can be saved if the distribution of lead time demand, f(QSUBX), can be derived by direct mathematical means. Unfortunately, this can be done in specific instances only. One of these exists when both demand and lead time are lognormally distributed. In this case, the distribution of lead time demand will be lognormal. (15). This may be shown as follows:

> Under the assumption that cumulative demand is linear in time with the rate subject to random variation, then lead time demand is given by

$$QSUBX = (DSUBX)(LSUBX) . \qquad (6.1)$$

Taking the logarithm,

$$\log QSUBX = \log DSUBX + \log LSUBX .$$

If DSUBX and LSUBX are distributed lognormally, the logarithm of the randomly distributed variables will be distributed normally. Since log DSUBX and log LSUBX are distributed normally, then so will log QSUBX. Hence, QSUBX will be distributed lognormally. The QSUBX probabilities may be calculated with the aid of tables for areas under the normal curve after transformation and standardization of the lognormally distributed variable.

The parameters of the resulting distribution may be found directly from the basic demand and lead time distributions. If M(log DSUBX) and M(log LSUBX) are the means of the distributions of log demand and log lead time, respectively, then, the mean of log lead time demand is:

$$M(\log QSUBX) = M(\log DSUBX) + M(\log LSUBX) . \qquad (6.2)$$

Similarly, the variance is:

$$V(\log QSUBX) = V(\log DSUBX) + V(\log LSUBX) \qquad (6.3)$$

where log DSUBX and log LSUBX are distributed independently.

A very interesting method of deriving the approximate distribution of lead time demand exists when lead time is known to be constant. In this case, it is not necessary

that the form of the distribution of DSUBX be known. All that is necessary is that its moment generating function exists. Then, from the central limit theorem, lead time demand will be a random variable

$$QSUBX = \sum^{L} DSUBX$$

that possesses a distribution that approaches normality as the constant lead time (L) approaches infinity. (24).

The mean of the distribution of QSUBX may be computed by:

$$QSUBM = L(DSUBM) \tag{6.4}$$

and the variance by:

$$QSUBV = L(DSUBV) \ . \tag{6.5}$$

The distribution of lead time demand can always be developed by use of the Monte Carlo method. This involves repeated evaluation of the expression:

$$QSUBX = \sum^{LSUBX} DSUBX \ . \tag{6.6}$$

The form of the distribution is exhibited by the histogram of QSUBX. If needed, its mean and variance may be computed by standard methods. (24). A digital computer scheme for developing QSUBX for any given theoretical or empirical input distribution of DSUBX and LSUBX is given in (7). The

primary drawback of this method of finding QSUBX is that the resulting distribution is not exact, but depends upon the sample size.

Numerical Derivation of Lead Time Demand

With the exception of the Monte Carlo method, the derivations of the previous section are useful in special cases only. For complete generality, it will be necessary to have an exact method for finding the lead time demand distribution regardless of the forms of the input distributions of demand and lead time. This section undertakes the task of developing such a method.

In addition to the notation already introduced, let:

QSUBX (L) = lead time demand random variable given that the lead time is L periods.

f QSUBX (L) = lead time demand distribution given that the lead time is L periods.

Reference to Figure 12 shows that the conditional probability of QSUBX $\geq$ Q for a given lead time is:

$$P\left(QSUBX \geq Q/L\right) = \sum_{QSUBX(L)=Q}^{\infty} f\ QSUBX(L) \ . \qquad (6.7)$$

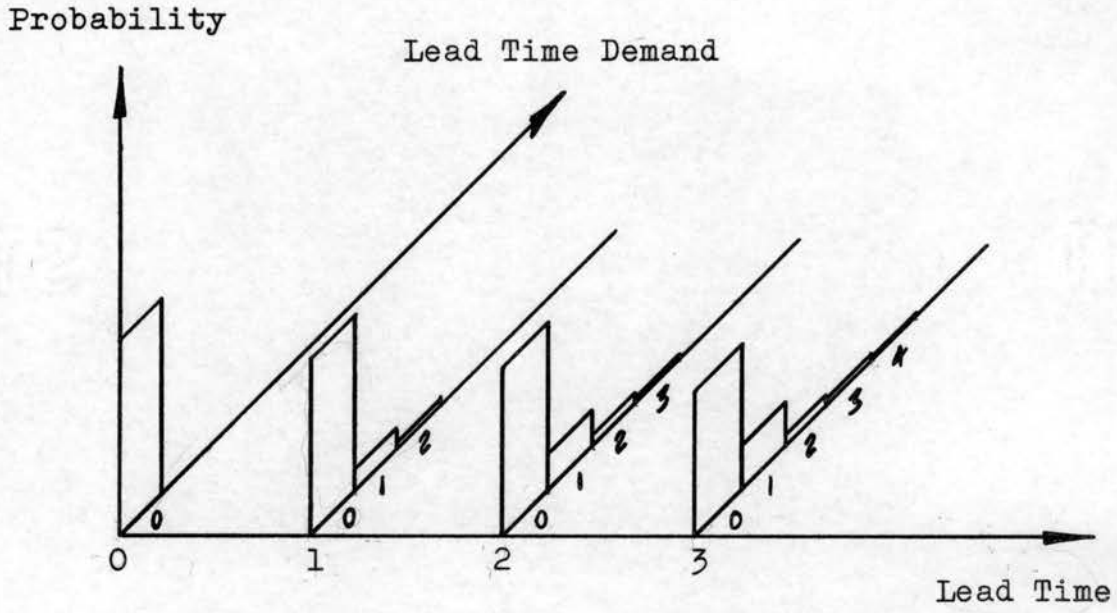


Figure 12. Joint Distribution of Demand and Lead Time

Multiplying Equation (6.7) by f LSUBX and summing over all values of L gives:

$$P(QSUBX \geq Q) = \sum_{L=0}^{\infty} f\ LSUBX \sum_{QSUBX(L)=0}^{\infty} f\ QSUBX(L) \quad . \quad (6.8)$$

It is obvious that if Q = 0, $P(QSUBX \geq Q) = 1$. If Q = 1, then $P(QSUBX \geq 1) < 1$ and $P(QSUBX \geq Q) - P(QSUBX \geq 1)$ is the probability that QSUBX is equal to zero. This argument holds for finding the probability associated with each integral value of QSUBX. In this connection, consider the very simple demand and lead time distributions of Figure 13.

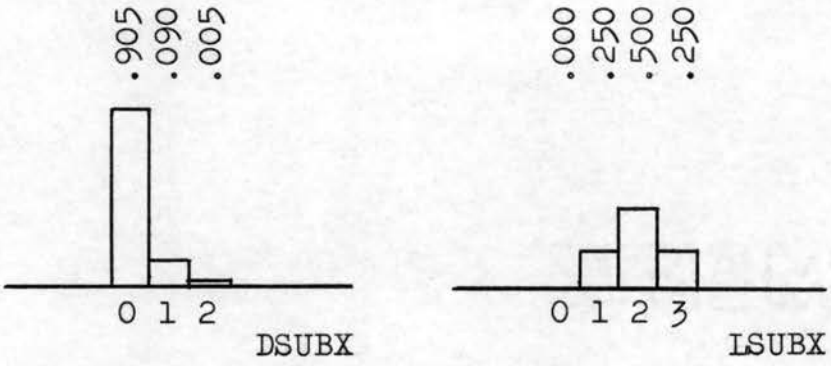


Figure 13. Simple Demand and Lead Time Distributions

Also, consider Table I, which is a tabular representation of Figure 12 (page 53).

TABLE I

TABULAR REPRESENTATION OF FIGURE 12

	LSUBX				ADJUST				
QSUBX	0	1	2	3	.000	.250	.500	.250	P(QSUBX)
0	1.00	.905	.819	.741	.000	.226	.410	.178	.814
1		.090	.164	.222		.023	.082	.056	.161
2		.005	.016	.033		.001	.008	.008	.017
3			.001	.003			.001	.001	.002
4				.001				.001	.001

The values in the first section of Table I were developed from the distributions of Figure 13 and Equation (6.8). The steps involved are:

(1) Enter the values in column LSUBX = 0 by noting that if lead time is zero, it is certain that lead time demand will be zero.

(2) Enter the values in column LSUBX = 1 by noting that if lead time is 1 period, the probabilities from the demand distribution with mean 1 give the lead time demand probabilities.

(3) Enter values into columns LSUBX = 2, 3, ... by noting that the mean and variance of the basic distribution will be increased by a factor of 2, 3, ..., etc.

In this example, the demand distribution is Poisson and the probabilities are tabulated. (26). If the DSUBX distribution is not a theoretical distribution so that the probabilities may be computed, it will be necessary to use an alternate scheme to find the probabilities associated with each LSUBX value. This scheme will be discussed later.

The second section of Table I (page 54) involves adjustment of each column so that the total probability will be 1. This is accomplished by multiplying each column by the probability of LSUBX taking on its associated value. The result will be a joint probability density somewhat analogous to Figure 12. Finally, the QSUBX marginal

distribution is developed by summing the probability associated with each QSUBX value in the joint distribution. These are entered in the last column and are the probabilities of the lead time demand taking on each value indicated. This column is histogrammed in Figure 14.

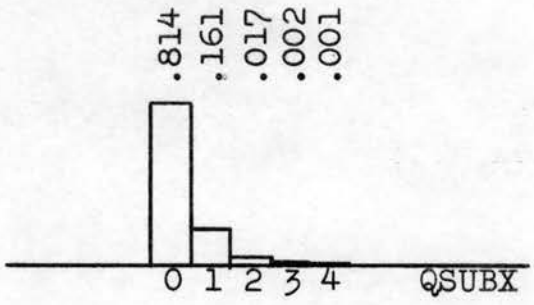


Figure 14. QSUBX Histogram

Assume now that the DSUBX distribution does not conform to any known theoretical distribution. It might simply be a histogram of empirical demand data. In such a case, the conditional distributions of the first section of Table I (page 54) cannot be calculated from the known model of the distribution. They must be expanded from the given empirical histogram by the following scheme. Making use of the multinomial:

$$\frac{n!}{n_1!n_2!n_3!} p_1^{n_1} p_2^{n_2} p_3^{n_3} \qquad (6.9)$$

which, for this example, is actually a trinomial. Using the probabilities of the DSUBX histogram in Figure 13 (page 54) results in the expansion of Figure 15. It will be noted that the calculations fall into three columns, the individual terms of which correspond to the columns of the first section of Table I (page 54).

The usefulness of this scheme is limited due to the computational work involved. However, if the QSUBX distribution is needed where the DSUBX distribution form is unknown, this method gives an exact development.

The Shortage Distribution

Lead time demand is independent of the procurement level. A lead time demand distribution, such as the one shown in Figure 14 (page 56), expresses the number of demands that may occur during the lead time period. The ability of the inventory system to meet the demands that occur during this period will depend upon the procurement level choice. Therefore, it will be necessary to express the inability of the system to meet lead time demand as a function of the procurement level.

Figure 16a shows a simple lead time demand distribution with mean of 2.00. It is apparent that, if the procurement level is set at zero, and if procurement action is initiated when the stock level reaches zero, this distribution is the shortage distribution. This is verified by reasoning as follows. If no demands occur during the

P_0 : $\frac{1!}{1!0!0!}\ .905^1\ .090^0\ .005^0 = .905$;	$\frac{2!}{2!0!0!}\ .905^2\ .090^0\ .005^0 = .819$;	$\frac{3!}{3!0!0!}\ .905^3\ .090^0\ .005^0 = .741$
P_1 : $\frac{1!}{0!1!0!}\ .905^0\ .090^1\ .005^0 = .090$;	$\frac{2!}{1!1!0!}\ .905^1\ .090^1\ .005^0 = .164$;	$\frac{3!}{2!1!0!}\ .905^2\ .090^1\ .005^0 = .222$
	$\frac{2!}{1!0!1!}\ .905^1\ .090^0\ .005^1$	$\frac{3!}{1!2!0!}\ .905^1\ .090^0\ .005^2$
P_2 : $\frac{1!}{0!0!1!}\ .905^0\ .090^0\ .005^1 = .005$;	$= .016$;	$= .003$
	$\frac{2!}{0!2!0!}\ .905^0\ .090^2\ .005^0$	$\frac{3!}{1!0!2!}\ .905^1\ .090^1\ .005^1$
	$\frac{2!}{0!1!1!}\ .905^0\ .090^1\ .005^1$	
P_3 : 0 ;	$= .001$;	$\frac{3!}{1!1!1!}\ .905^1\ .090^1\ .005^1 = .003$
	$\frac{3!}{0!3!0!}\ .905^0\ .090^3\ .005^0$	
		$\frac{3!}{1!0!2!}\ .905^1\ .090^0\ .005^2$
P_4 : 0 ;	0 ;	$= .001$
		$\frac{3!}{0!2!1!}\ .905^0\ .090^2\ .005^1$

Figure 15. Multinomial Expansion Scheme

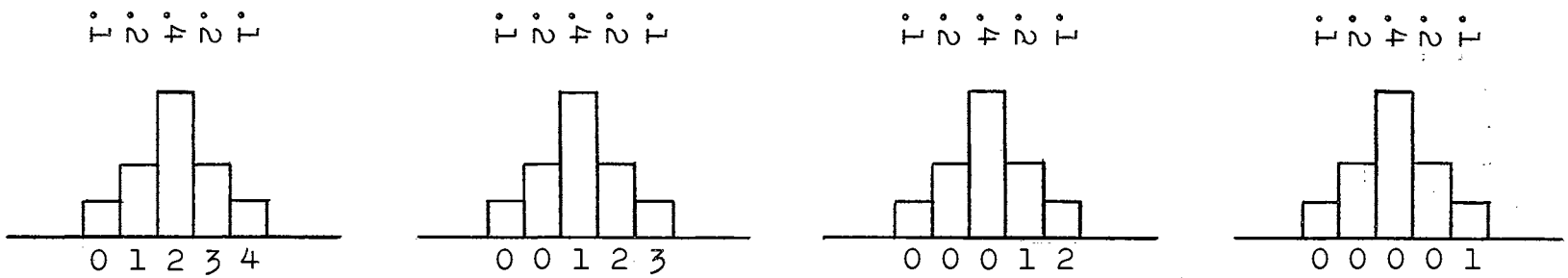


Fig. 16a. PL = 0 Fig. 16b. PL = 1 Fig. 16c. PL = 2 Fig. 16d. PL = 3

Figure 16. Shortage Distribution Development

lead time, no shortages will result; if one demand occurs during the lead time, one shortage will result, and so on. The probability of each of these events is given by the lead time demand distribution. The mean of the shortage distribution for PL = 0 is the mean of the basic lead time demand distribution.

Next, consider Figure 16b which shows the shortage distribution for the procurement level set at 1. In this case, if no demands occur during the lead time, no shortages will result. Likewise, if one demand occurs during the lead time, no shortages will result. However, if two demands occur during the lead time, one shortage will result and, if three occur, two shortages will result, and so forth. The probabilities associated with each of these events are given by the basic lead time demand distribution, and may be used in finding the mean of the resulting shortage distribution as shown.

Figure 16c illustrates the shortage distribution that results when the procurement level is set at 2, and Figure 16d illustrates the shortage distribution with PL = 3. No shortage distribution exists for PL = 4 because no more than four demands may occur during the lead time. Figure 16 illustrates that the mean of the shortage distribution (SSUBM) can be derived directly from the QSUBX distribution for each possible PL choice.

In the previous chapter, it was noted that procurement action is not always initiated when the stock level

is equal to PL. It was argued that, on the average, procurement action will occur at some value below the procurement level due to the periodic review of the stock position. In the section which follows, the discrepancy between the expected number of shortages per cycle (SSUBM) and the actual number of shortages per cycle experienced by the inventory flow simulation of Chapter IV will be noted.

QSUBX and SSUBM Program

The digital computer program of Appendix B-2 was designed to derive the distribution of lead time demand by numerical means. In essence, it performs the calculations described by Equation (6.8) and Table I (page 54). In addition, it computes the expected number of shortages per cycle resulting from each possible PL choice.

Appendix B-1 exhibits the input distributions used in this experimental investigation. Given first is a group of Poisson demand conditionals. Each distribution of the group is a lead time demand distribution given that the lead time is equal to its mean. The conditionals, in their aggregate, make up a package that may be used with any theoretical or empirical lead time distribution to develop the distribution of lead time demand. All probability values were punched eight per card directly from Molina (26) and converted to the floating point form shown.

Separating each conditional distribution is a card

giving the distribution identification (with a minus sign) in word 1, the mean and variance of the distribution in words 2 and 3, and skeleton instructions in words 4 through 8. Each of these has a function in the computer program. Note that the package contains distributions with means of 1 through 24 in steps of 1; means 2 through 48 in steps of 2; means 3 through 72 in steps of 3; and means of 4 through 96 in steps of 4. This allows the computer program to develop QSUBX distributions for DSUBM of 1, 2, 3, and 4 for any given lead time distribution with its maximum LSUBX value ≤ 24.

Fifteen lognormal lead time distributions used in this study are exhibited next. They represent five groups, each group with approximately the same mean. The three distributions within each group differ only in their variances.

After preparing the input distributions per the requirements of Appendix B-1, the QSUBX and SSUBM package is assembled in the following order:

(1) drum zero cards

(2) QSUBX and SSUBM program

(3) transfer card (0301)

(4) lead time distribution

(5) demand conditionals.

After loading, the numerical process will begin. The results will be punched on cards in the format of Appendix B-3. One machine run is required for each of the fifteen decks of cards printed. Columns 1, 3, 5, and 7 contain

the QSUBX probabilities for the lead time distribution used, and correspond to DSUBM values of 1, 2, 3, and 4, respectively. These, then, are QSUBX distributions for the specifications given above the printed values. Columns 2, 4, 6, and 8 give values for the expected number of shortages per cycle resulting from a PL choice corresponding to the numerical values in the column at the extreme left.

Reference to Figure 17, and the groups of output distributions corresponding to LSUBM of 6.00, 6.04, and 6.16 (Appendix B-3), show the nature of the lead time demand distributions. Used as coordinates in Figure 17 are the input demand and input lead time distributions giving rise to each lead time demand distribution shown.

Figure 18 gives a graphical representation of the expected number of shortages per cycle as a function of the PL choice. This figure refers specifically to the case where LSUBM = 8.05 and V(LOG LSUBX) = 0.05, one of the lead time distributions used in the example of the next chapter. Note the sharp change in the slope of the line at a point just beyond the QSUBM point. This phenomenon was noted in an earlier study and was discussed more fully there. (7).

The purpose of the derivations in this chapter was to develop an expression that would yield an approximation to the expected number of shortages per cycle as found by the simulation scheme of Chapter IV. Figure 19 shows the final

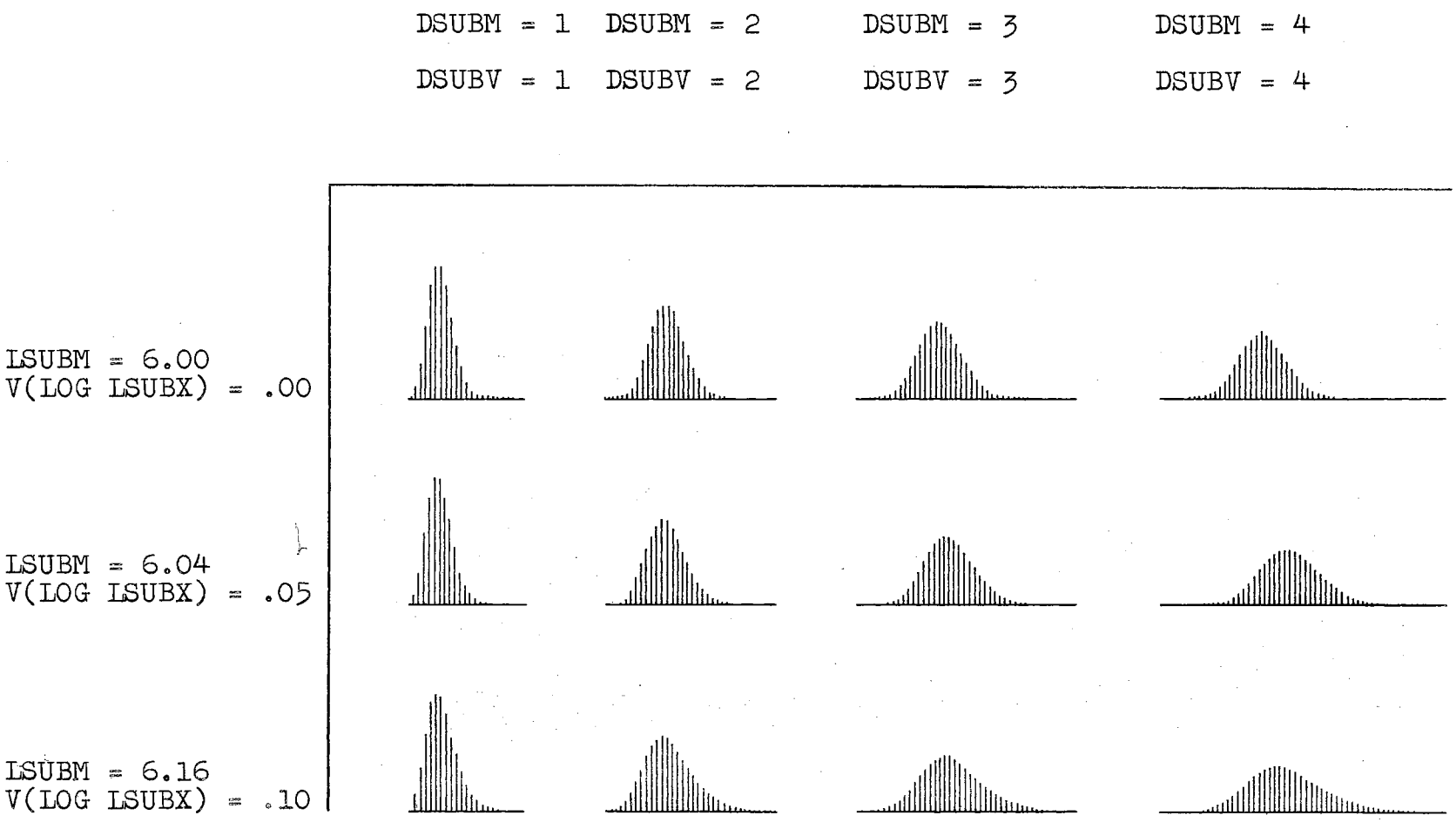


Figure 17. QSUBX Distribution Development

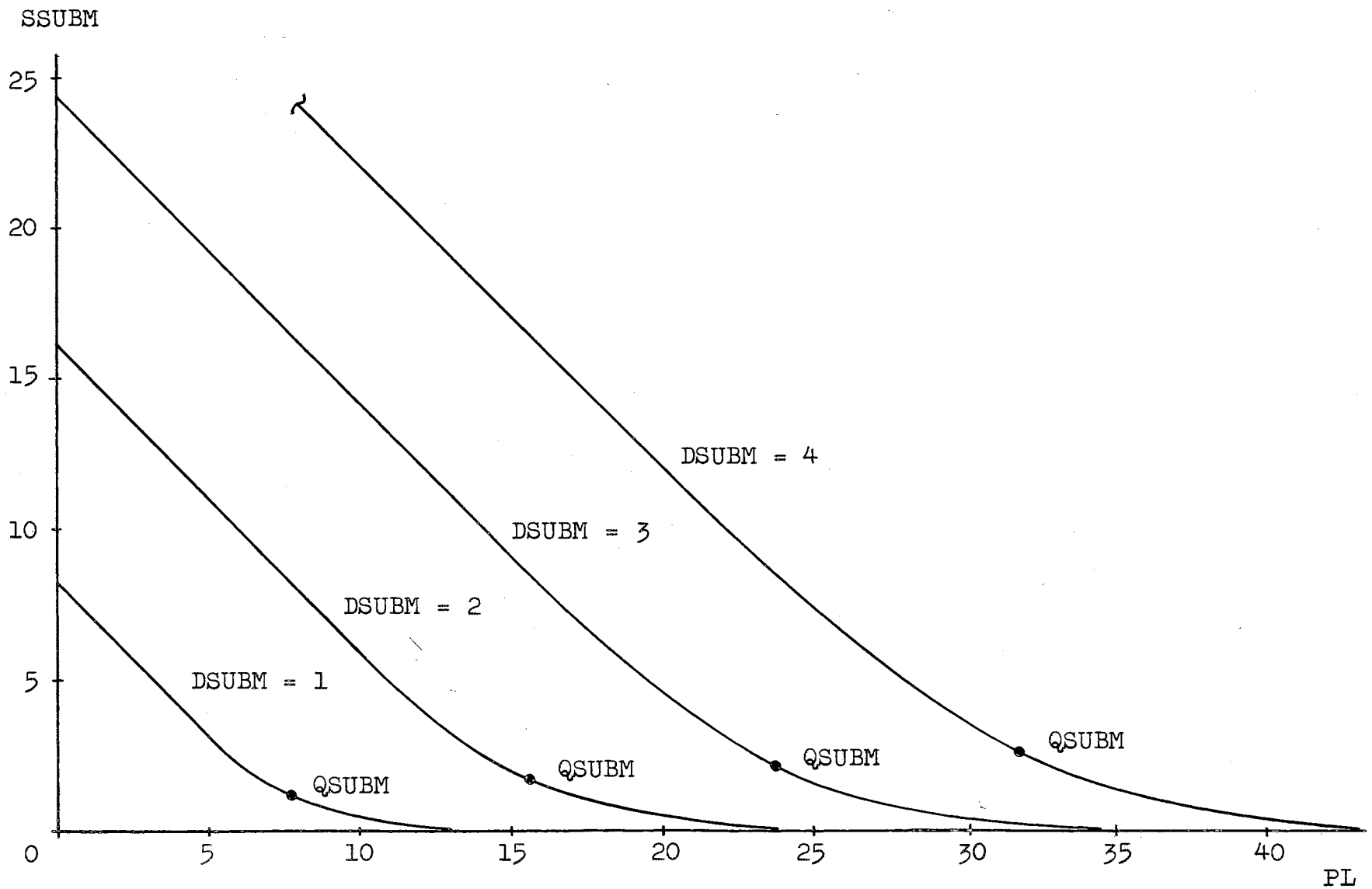


Figure 18. SSUBM as a Function of PL

stock position histogram (QSUBF) of Figure 7 (page 38) superimposed upon a QSUBX histogram developed by the methods of this chapter. Both distributions were developed from the same demand and lead time distributions. The discrepancy exhibited is a result of the initiation of procurement action when the stock level is below the chosen procurement level.

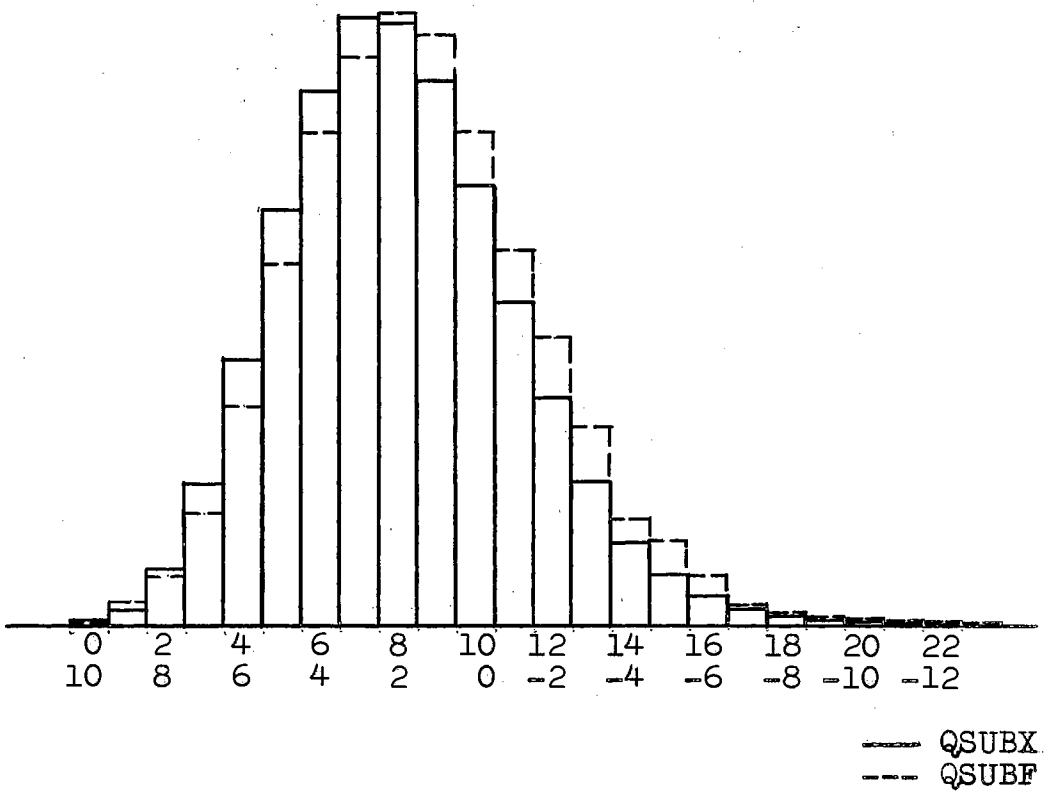


Figure 19. QSUBF and QSUBX Superimposed

The effect of this discrepancy can be noted by referring to the converged value of column 6, Appendix A-3. The

value shown, 0.6635, is the average number of shortages per cycle experienced by the 6000 cycles simulated. In the simulated system, demand was distributed Poisson with a mean of 1 and lead time was distributed lognormally with a mean of 8.05 and V(LOG LSUBX) = 0.05. Also, the procurement level was set at 10 for the simulated system. With these specifications, reference to Appendix B-3 and Figure 18 (page 65) gives the expected number of shortages as 0.4992. This value, when compared with the simulated result of 0.6635 gives a discrepancy of 0.1643.

Initiation of procurement action when the stock level is below a chosen PL will result in an increase in the expected number of shortages computed for that PL choice. The increase exhibited here is due primarily to this cause. In fact, it is strongly suggested that the stock level was 0.1643 units below the procurement level, on the average, when procurement action was initiated. It will be recalled that the total cycle stock was not reduced by this phenomenon as was expected. This led to the conclusion that the derivation of TS was bias.

It must also be concluded that the expected number of shortages per cycle, as derived in this chapter, yields a value that is bias. This discrepancy between the expected number of shortages as theoretically developed and the number of shortages experienced in simulation will affect the total system cost. The next chapter will note the magnitude of this effect.

CHAPTER VII

TOTAL COST SURFACES

Associated with each point on the PL - PQ plane, described in Chapter V, is an expected total cost. This expected cost may be computed, with difficulty, by the simulation scheme of Chapter IV. It will be the purpose of this chapter to develop a direct method for computing the expected total system cost for any procurement level, procurement quantity, and procurement source. In the accomplishment of this task, the derivations of Chapters III, V, and VI will be utilized. The results will be presented in the form of total cost surfaces, each surface corresponding to one source and being composed of total cost points arising from all possible PL - PQ coordinates.

The Total Cost Function

The equations and tabulated values previously developed may be used to derive the expected total cost for any given procurement level, procurement quantity, and procurement source. This expected total cost will be a summation of four major cost components. These components will be developed in the paragraphs which follow by reference to Chapters III, V, and VI.

Item cost, representing the dollar value attached to the item, was derived in Equation (3.1) for the purchase alternative and in Equation (3.6) for the manufacturing or remanufacturing alternative. The expected item cost per period will be a function of this dollar value and the expected number of demands per period. This expected item cost per period will be a component in the total cost function and may be computed as:

$$IC = ic\ (DSUBM)\ . \qquad (7.1)$$

Procurement cost, representing a summation of costs incurred in the procurement activity, was derived in Equation (3.7) for the purchase alternative and in Equation (3.8) for the manufacturing or remanufacturing alternative. The expected procurement cost per period is a function of the cost per procurement and the expected number of periods per cycle. The latter element was derived in Equation (5.1) or (5.4). Therefore, the expected procurement cost per period may be computed as:

$$PC = \frac{pc}{PF}\ . \qquad (7.2)$$

Holding cost, usually expressed as a rate per year, was developed in Equation (3.9). The expected holding cost per period is a function of this holding cost rate, the expected total stock per period, and the dollar value of the stock. For the case where $PL + PQ \leq QSUBM$, the expected total stock per cycle was shown to be zero by

Equation (5.3). Equation (5.2) gave the expected total stock per cycle for the case where $0 \leq PL < QSUBM$. Where $PL \geq QSUBM$, the expected total stock per cycle was given by Equation (5.5). Therefore, the equation expressing the expected holding cost per period is:

$$HC = \frac{TS}{PF} \left(ic\right)\left(\frac{hc}{n}\right) \qquad (7.3)$$

where n = the number of periods per year.

Shortage cost, involving the penalty incurred for being unable to meet a demand when it occurs was derived in Equation (3.10). Shortage cost per period will be a function of the expected number of shortages per cycle, the cost per shortage, and the expected number of periods in the cycle. The expected shortage cost per period is computed as:

$$SC = \frac{sc(SSUBM)}{PF} \; . \qquad (7.4)$$

The expected total cost per period will be a summation of the four cost components developed above, and may be expressed as:

$$TC = IC + PC + HC + SC \; . \qquad (7.5)$$

It is evident from the equations referenced in this section that the expected total cost per period given by Equation (7.5) is a function of the procurement level, the procurement quantity, the procurement source, the expected

value of the lead time demand distribution, the expected value of the shortage distribution, the item cost, the procurement cost, the holding cost, and the shortage cost.

All Total Cost Points Program

The digital computer program of Appendix C-2 was developed to find the solution to Equation (7.5) for any given procurement level, procurement quantity, and procurement source. In the accomplishment of its task, the program considers all equations derived and referenced in the previous section. As specific inputs, the computer program requires SSUBM data such as that developed in Appendix B-3 and parameter and cost inputs as given in Appendix C-1.

Illustration of the versatility of the computer program is indicated by development of the three total cost surfaces given in Appendix C-3. Each surface corresponds to a source alternative. Their development requires assembly of a program package in the following order:

(1) drum zero cards
(2) all total cost points program
(3) log-antilog subroutine
(4) transfer card (0301)
(5) SSUBM deck for source 1
(6) distribution identification card for source 1
(7) parameter and cost card for source 1
(8) price break card for source 1

(9) item cost card for source 1

(10) SSUBM deck for source 2

(11) distribution identification card for source 2

(12) parameter and cost card for source 2

(13) price break card for source 2

(14) item cost card for source 2

(15) SSUBM deck for source 3

(16) distribution identification card for source 3

(17) parameter and cost card for source 3

(18) manufacturing progress card for source 3.

Selection of the SSUBM deck from Appendix B-3 is made in accordance with the lead time characteristics of the source under consideration. The distribution identification cards for each source, given in Appendix C-1, exhibit the lead time distribution mean and variance in words 7 and 8. The remainder of the card is self explanatory.

The parameter and cost cards needed by the program contain the mean of the demand distribution in word 1 and cost inputs in words 6, 7, and 8. The demand distribution mean may take on any value in the range $1 \leq \text{DSUBM} \leq 4$, since the program will interpolate to find a SSUBM value lying between the integral values of 1, 2, 3, or 4. The costs entered in words 6, 7, and 8 are developed from Equations (3.7) or (3.8), (3.9) divided by the number of periods per year, and Equation (3.10), respectively. Word 5 contains zeros or nines, depending on whether the item cost is computed from a price break structure or from

Equation (3.6) which considers manufacturing or remanufacturing costs with manufacturing progress. The constants shown are entered into words 2, 3, and 4.

Also exhibited in Appendix C-1 are two types of price break cards. Note that the break card for source 1 involves 8 breaks, each increasing the quantity by 12 units. The last break covers a quantity from 85 to the limit of the floating point number, all nines. The break card for source 2 is designed so that regardless of the quantity purchased, the price will not change. In essence, this is a special case of the price break categories of the previous card, but with the first break going from 1 unit to a number of units equal to the limit of the floating point number of all nines.

The item cost card for source 1 details the cost per unit for the quantity categories specified by the price break card. A procurement quantity in the range $1 \leq PQ \leq 12$ may be purchased for \$4.00 per unit. A procurement quantity in the last break, $85 \leq PQ \leq 9999999999$ may be purchased for \$3.30 per unit. The item cost card for source 2 gives the price per unit as \$4.00 for procurement quantities in the range $1 \leq PQ \leq 9999999999$.

Item cost for source 3 is computed from Equation (3.6) and requires that input data in the format of the manufacturing progress card be prepared. Word 1 contains the progress factor expressed as a decimal fraction. For the example used here, this is set at 0.80, but may be set at

any other value. If no manufacturing progress is to be considered by the manufacturing or remanufacturing facility, this value is set equal to 1.00. Word 2 contains the logarithm of the value in word 1 divided by the logarithm of the constant 2, as given in Equation (3.2). Word 3 contains zeros. Words 4 through 8 contain the initial hours, the previous units, the direct labor hourly rate, the direct material cost per item, and the factory burden rate expressed as a percentage of the direct labor rate. These elements were discussed in Chapter III.

Output Surfaces

After loading of the program package outlined in the previous section, the computational process will begin. The program will develop one surface at a time, and will print the results in the ten column format shown in Appendix C-3. Each line corresponds to a procurement level, procurement quantity coordinate for the source to which the surface applies.

Surface number 1 gives the expected total cost points for the purchase alternative exhibiting a price break structure. Surface number 2 corresponds to the purchase alternative with no price break structure. Surface number 3 exhibits the total cost points for the manufacturing alternative. Each source alternative differs in its lead time capability, its item cost characteristic, and in its procurement cost. The specific distributions, parameters,

and cost elements assumed for each of these surfaces may be noted by close study of Appendix C-1.

Columns 1 and 2 of the Appendix C-3 printout give the PL - PQ coordinate giving rise to the total cost value of column 10. Column 3 gives the expected procurement frequency per cycle; column 4, the expected total stock per cycle; and column 5, the expected number of shortages per cycle. The equations from which the PF and TS values were computed are presented in Chapter V. The derivation upon which the SSUBM values are based was given in Chapter VI.

Columns 6 through 9 give the cost components making up the total cost of column 10. These are derived from the values in columns 3, 4, and 5 together with the equations developed in the first section of this chapter. The first of these components, the expected item cost per period, is seen to be a step function for source alternative 1. The breaks occur in accordance with the quantities specified by the price break structure for this source. Item cost for source alternative 2 is constant regardless of the procurement quantity since no price break schedule was considered. Source alternative 3 entails an item cost arising from a manufacturing facility experiencing an 80 per cent manufacturing progress function. The result is a continuous decline in item cost with increasing procurement quantity.

The expected procurement cost per period decreases continuously as the number of periods between procurement

action increases. This decrease is due to the spreading of the cost of procurement over an increasing number of periods. The decrease is noted for all three source alternatives.

A third cost component, the expected holding cost per period increases with increasing procurement quantity for all three sources considered. Even though this cost is influenced, in part, by a decreasing item cost, this decrease was not sufficient to make holding cost decrease. This cost component is the only one that shows an increase with increasing procurement quantity.

The expected shortage cost per period decreases as the number of periods per cycle increases. The expected number of shortages per cycle is constant, but when the cycle cost of shortages is divided by the number of periods in the cycle this decrease occurs. Involved here is a spreading of the shortage cost over an increasing number of periods.

The expected total cost per period, given in column 10, is the summation of these four cost components. Since the components exhibit increasing and decreasing costs, the total cost will decrease to a minimum point and then will increase indefinitely. The total cost values are given for each value of PL with PQ varying from 1 until such a time that the total cost stops decreasing and begins increasing. At this point, the next PL value is considered with PQ again increasing over its range. This

process is continued until the expected number of shortages associated with the PL value becomes zero. Beyond this point, the total cost will increase indefinitely for an increase in PL will add to the holding cost without subtracting from the shortage cost. In this way, the printout of Appendix C-3 is limited in its computation of total cost points by the bounds mentioned.

Figures 20, 21, and 22 give the total cost values associated with each coordinate for source 1, source 2, and source 3, respectively. The minimum cost point on each of these surfaces was located by reference to the Appendix C-3 printout which gives greater decimal accuracy than the values shown in the figures.

Study of the minimum cost values for each source alternative indicates that none are lower than the minimum point on the surface for source 1. The optimal inventory policy for the multisource item considered by the example of this chapter is given by the PL - PQ coordinates and the source to which surface 1 refers. Specifically, the optimal inventory policy is that policy involving the following values:

(1) procurement level 10 units

(2) procurement quantity 16 units

(3) procurement source 1.

The next chapter will present a computer program that will find the minimum point on each surface considered without involving the lengthy printout of Appendix C-3.

PL \ PQ	1	2	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
0	22.6	13.3	5.34	5.26	5.18	5.11	5.05	5.00	4.96	4.92	4.89	4.86	4.84	4.82	4.69	4.68	4.66	4.65	4.64	4.63	4.62	4.61	4.61	4.61	4.60	4.60	4.49	4.49	4.49	4.49
1	20.6	12.3	5.21	5.13	5.06	5.00	4.95	4.91	4.87	4.84	4.81	4.79	4.77	4.75	4.63	4.62	4.61	4.60	4.59	4.58	4.58	4.57	4.57	4.57	4.57	4.57	4.46	4.46		
2	18.6	11.3	5.07	5.01	4.94	4.89	4.85	4.82	4.78	4.76	4.74	4.72	4.70	4.69	4.57	4.56	4.55	4.55	4.54	4.54	4.54	4.53	4.53	4.53	4.53					
3	16.6	10.3	4.93	4.88	4.83	4.79	4.76	4.72	4.70	4.68	4.66	4.65	4.64	4.63	4.51	4.51	4.50	4.50	4.49	4.49	4.49	4.49	4.49							
4	14.7	9.37	4.81	4.76	4.72	4.69	4.66	4.64	4.62	4.61	4.59	4.58	4.58	4.57	4.46	4.45	4.45	4.45	4.45	4.45										
5	12.9	8.48	4.69	4.65	4.62	4.60	4.58	4.56	4.55	4.54	4.53	4.53	4.52	4.52	4.41	4.41	4.41													
6	11.3	7.68	4.59	4.56	4.54	4.52	4.51	4.50	4.49	4.48	4.48	4.48	4.48	4.48																
7	10.0	7.01	4.51	4.49	4.47	4.46	4.45	4.45	4.44	4.44	4.44	4.44																		
8	8.93	6.48	4.45	4.44	4.43	4.42	4.41	4.41	4.41	4.41																				
9	8.13	6.09	4.41	4.40	4.40	4.39	4.39	4.39																						
10	7.56	5.83	4.39	4.39	4.39	4.39	4.39																							
11	7.19	5.65	4.39	4.39	4.39	4.39																								
12	6.96	5.56	4.40	4.40	4.40																									
13	6.84	5.51	4.41	4.41	4.41																									
14	6.77	5.49	4.43	4.43																										
15	6.75	5.49	4.46	4.46																										
16	6.70	5.51	4.48	4.48																										
17	6.77	5.53	4.51	4.51																										
18	6.79	5.55	4.54	4.54																										
19	6.82	5.58	4.56	4.56																										
20	6.84	5.61	4.59	4.59																										
21	6.87	5.64	4.62	4.62																										
22	6.90	5.66	4.65	4.65																										
23	6.93	5.69	4.67	4.67																										
24	6.96	5.72	4.70	4.70																										
25	6.98	5.75	4.73	4.73																										
26	7.01	5.78	4.75	4.75																										
27	7.04	5.80	4.78	4.78																										
28	7.07	5.83	4.81	4.81																										
29	7.10	5.86	4.84	4.84																										
30	7.12	5.89	4.86	4.86																										
31	7.15	5.92	4.89	4.89																										
32	7.18	5.94	4.92	4.92																										
33	7.21	5.97	4.95	4.95																										
34	7.24	6.00	4.97	4.96																										

Figure 20. All Total Cost Points - Source 1

PL \ PQ	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
0	20.6	12.3	9.55	8.16	7.33	6.77	6.38	6.08	5.85	5.67	5.53	5.41	5.31	5.23	5.16	5.11	5.06	5.01	4.98	4.94	4.92	4.89	4.87	4.85	4.84	4.83	4.82	4.81	4.80	4.79	4.79	4.79	4.78	4.78
1	18.6	11.3	8.89	7.67	6.93	6.44	6.09	5.84	5.64	5.48	5.36	5.26	5.17	5.10	5.05	5.00	4.95	4.92	4.89	4.86	4.84	4.82	4.81	4.79	4.78	4.77	4.76	4.76	4.75	4.75	4.75	4.75	4.74	
2	16.7	10.3	8.23	7.17	6.54	6.11	5.82	5.60	5.43	5.30	5.19	5.11	5.04	4.98	4.93	4.89	4.86	4.83	4.80	4.78	4.77	4.75	4.74	4.73	4.73	4.72	4.71	4.71	4.71	4.71	4.71	4.71		
3	14.8	9.40	7.60	6.70	6.16	5.80	5.55	5.37	5.23	5.12	5.04	4.97	4.91	4.86	4.82	4.79	4.77	4.74	4.73	4.71	4.70	4.69	4.68	4.67	4.67	4.67	4.66	4.66	4.66					
4	13.0	8.50	7.00	6.25	5.81	5.52	5.31	5.16	5.05	4.96	4.89	4.84	4.79	4.76	4.73	4.70	4.68	4.67	4.65	4.64	4.64	4.63	4.63	4.62	4.62	4.62	4.62							
5	11.4	7.71	6.47	5.86	5.50	5.27	5.10	4.98	4.89	4.82	4.77	4.73	4.69	4.66	4.64	4.63	4.61	4.60	4.59	4.59	4.58	4.58	4.58	4.58										
6	10.0	7.03	6.03	5.54	5.25	5.06	4.93	4.83	4.76	4.71	4.67	4.64	4.61	4.59	4.58	4.57	4.56	4.55	4.55	4.55	4.55	4.55												
7	8.98	6.50	5.69	5.29	5.05	4.90	4.80	4.72	4.67	4.63	4.60	4.57	4.55	4.54	4.53	4.52	4.52	4.52	4.52	4.52														
8	8.16	6.11	5.44	5.11	4.91	4.79	4.71	4.65	4.60	4.57	4.55	4.53	4.52	4.51	4.50	4.50	4.50	4.50																
9	7.57	5.83	5.26	4.98	4.82	4.71	4.65	4.60	4.56	4.54	4.52	4.51	4.50	4.49	4.49	4.49	4.49																	
10	7.16	5.64	5.14	4.90	4.76	4.67	4.61	4.57	4.54	4.52	4.51	4.50	4.49	4.49	4.49	4.49																		
11	6.90	5.52	5.07	4.85	4.73	4.65	4.60	4.56	4.54	4.52	4.51	4.50	4.50	4.50	4.50																			
12	6.74	5.45	5.04	4.83	4.72	4.65	4.60	4.57	4.54	4.53	4.52	4.51	4.51	4.51	4.51																			
13	6.64	5.42	5.02	4.83	4.72	4.65	4.61	4.58	4.56	4.55	4.54	4.53	4.53	4.53																				
14	6.60	5.41	5.03	4.84	4.74	4.67	4.63	4.60	4.58	4.57	4.56	4.55	4.55	4.55																				
15	6.58	5.42	5.04	4.86	4.76	4.69	4.65	4.62	4.60	4.59	4.58	4.58	4.58	4.58																				
16	6.59	5.44	5.06	4.88	4.78	4.71	4.67	4.65	4.63	4.61	4.61	4.60	4.60	4.60																				
17	6.60	5.46	5.08	4.91	4.80	4.74	4.70	4.67	4.65	4.64	4.63	4.63	4.63	4.63																				
18	6.62	5.48	5.11	4.93	4.83	4.77	4.73	4.70	4.68	4.67	4.66	4.66	4.66	4.66																				
19	6.64	5.51	5.14	4.96	4.86	4.79	4.75	4.73	4.71	4.70	4.69	4.69	4.69	4.69																				
20	6.67	5.53	5.16	4.99	4.88	4.82	4.78	4.75	4.74	4.72	4.72	4.71	4.71	4.71																				
21	6.70	5.56	5.19	5.01	4.91	4.85	4.81	4.78	4.76	4.75	4.74	4.74	4.74	4.74																				
22	6.72	5.59	5.22	5.04	4.94	4.88	4.84	4.81	4.79	4.78	4.77	4.77	4.77	4.77																				
23	6.75	5.62	5.25	5.07	4.97	4.91	4.86	4.84	4.82	4.81	4.80	4.80	4.80	4.80																				
24	6.78	5.64	5.27	5.10	5.00	4.93	4.89	4.87	4.85	4.84	4.83	4.83	4.82	4.83																				
25	6.81	5.67	5.30	5.12	5.02	4.96	4.92	4.89	4.88	4.86	4.86	4.85	4.85	4.85																				
26	6.84	5.70	5.33	5.15	5.05	4.99	4.95	4.92	4.90	4.89	4.88	4.88	4.88	4.88																				
27	6.86	5.73	5.36	5.18	5.08	5.02	4.98	4.95	4.93	4.92	4.91	4.91	4.91	4.91																				
28	6.89	5.76	5.39	5.21	5.11	5.05	5.00	4.98	4.96	4.95	4.94	4.94	4.94	4.94																				
29	6.92	5.78	5.41	5.24	5.14	5.07	5.03	5.01	4.99	4.98	4.97	4.97	4.96	4.97																				
30	6.95	5.81	5.44	5.26	5.16	5.10	5.06	5.03	5.02	5.00	5.00	4.99	4.99	4.99																				
31	6.98	5.84	5.47	5.29	5.19	5.13	5.09	5.06	5.04	5.03	5.02	5.02	5.02	5.02																				
32	7.00	5.87	5.50	5.32	5.22	5.16	5.12	5.09	5.07	5.06	5.05	5.05	5.05	5.05																				
33	7.03	5.90	5.53	5.35	5.25	5.19	5.14	5.12	5.10	5.09	5.08	5.08	5.08	5.08																				
34	7.06	5.92	5.55	5.38	5.28	5.21	5.17	5.15	5.13	5.12	5.11	5.11	5.10	5.10																				
35	7.09	5.95	5.58	5.40	5.30	5.24	5.20	5.17	5.16	5.14	5.14	5.13	5.13	5.13																				
36	7.12	5.98	5.61	5.43	5.33	5.27	5.23	5.20	5.18	5.17	5.16	5.16	5.16	5.16																				
37	7.14	6.01	5.64	5.46	5.36	5.30	5.26	5.23	5.21	5.20	5.19	5.19	5.19	5.19																				
38	7.17	6.04	5.67	5.49	5.39	5.33	5.28	5.26	5.24	5.23	5.22	5.22	5.22	5.22																				
39	7.20	6.06	5.69	5.52	5.42	5.35	5.31	5.29	5.27	5.26	5.25	5.25	5.24	5.25																				
40	7.23	6.09	5.72	5.54	5.44	5.38	5.34	5.31	5.30	5.28	5.28	5.27	5.27	5.27																				
41	7.26	6.12	5.75	5.57	5.47	5.41	5.37	5.34	5.32	5.31	5.30	5.30	5.30	5.30																				
42	7.28	6.15	5.78	5.60	5.50	5.44	5.40	5.37	5.35	5.34	5.33	5.33	5.33	5.33																				
43	7.31	6.18	5.81	5.63	5.53	5.47	5.42	5.40	5.38	5.37	5.36	5.36	5.36	5.36																				

Figure 21. All Total Cost Points - Source 2

PL \ PQ	1	2	3	4	5	6	7	8	9	10	...	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
0	24.3	14.9	11.7	10.0	8.96	8.23	7.70	7.30	7.00	6.72		4.94	4.93	4.92	4.92	4.91	4.90	4.90	4.89	4.89	4.89	4.88	4.88	4.88	4.87	4.87	4.87	4.87	4.87	4.87	4.87
1	22.3	13.9	11.0	9.51	8.56	7.90	7.43	7.06	6.77	6.54		4.92	4.91	4.90	4.90	4.89	4.89	4.88	4.88	4.87	4.87	4.87	4.87	4.86	4.86	4.86	4.86	4.86	4.86	4.86	
2	20.3	12.9	10.3	9.02	8.17	7.58	7.16	6.83	6.57	6.36		4.90	4.89	4.89	4.88	4.88	4.87	4.87	4.86	4.86	4.86	4.86	4.86	4.85	4.85	4.85	4.85	4.85			
3	18.5	12.0	9.75	8.55	7.80	7.29	6.91	6.62	6.39	6.20		4.88	4.87	4.87	4.86	4.86	4.86	4.85	4.85	4.85	4.85	4.85	4.85	4.84	4.84	4.84					
4	16.8	11.1	9.19	8.14	7.48	7.03	6.69	6.43	6.22	6.05		4.87	4.86	4.86	4.85	4.85	4.85	4.85	4.84	4.84	4.84	4.84	4.84	4.84	4.84						
5	15.3	10.4	8.74	7.81	7.22	6.82	6.51	6.28	6.09	5.94		4.86	4.86	4.85	4.85	4.85	4.85	4.84	4.84	4.84	4.84	[4.84]	4.84								
6	14.3	9.96	8.40	7.56	7.03	6.66	6.39	6.17	6.00	5.86		4.86	4.86	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85										
7	13.5	9.61	8.18	7.41	6.91	6.57	6.31	6.11	5.95	5.82		4.87	4.87	4.87	4.86	4.86	4.86	4.86	4.86	4.86	4.86										
8	13.0	9.40	8.05	7.32	7.85	6.52	6.27	6.08	5.93	5.80		4.89	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88										
9	12.8	9.29	7.98	7.28	6.83	6.51	6.27	6.08	5.93	5.80		4.91	4.91	4.91	4.90	4.90	4.90	4.90	4.90	4.90	4.90										
10	12.7	9.25	7.97	7.28	6.83	6.52	6.28	6.09	5.94	5.82		4.93	4.93	4.93	4.93	4.92	4.92	4.92	4.92	4.92	4.92										
11	12.6	9.24	7.98	7.29	6.85	6.54	6.30	6.12	5.97	5.85		4.96	4.96	4.95	4.95	4.95	4.95	4.95	4.95	4.95	4.95										
12	12.6	9.27	8.01	7.32	6.88	6.57	6.33	6.15	6.00	5.88		4.99	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98										
13	12.7	9.30	8.04	7.36	6.91	6.60	6.37	6.18	6.03	5.91		5.02	5.01	5.01	5.01	5.01	5.00	5.00	5.00	5.00	5.00										
14	12.7	9.34	8.08	7.39	6.95	6.64	6.40	6.22	6.07	5.94		5.04	5.04	5.04	5.04	5.03	5.03	5.03	5.03	5.03	5.03										
15	12.7	9.38	8.12	7.43	6.99	6.67	6.44	6.25	6.09	5.98		5.07	5.07	5.07	5.06	5.06	5.06	5.06	5.06	5.06	5.06										
16	12.8	9.42	8.16	7.47	7.02	6.71	6.47	6.29	6.14	6.01		5.10	5.10	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09										
17	12.8	9.46	8.20	7.51	7.06	6.75	6.51	6.32	6.17	6.04		5.13	5.13	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12										
18	12.9	9.50	8.24	7.55	7.10	6.78	6.54	6.36	6.20	6.08		5.16	5.15	5.15	5.15	5.15	5.15	5.14	5.14	5.14	5.14										
19	12.9	9.54	8.28	7.58	7.14	6.82	6.58	6.39	6.24	6.11		5.19	5.18	5.18	5.18	5.18	5.18	5.17	5.17	5.17	5.17										
20	13.0	9.59	8.32	7.62	7.17	6.86	6.62	6.43	6.27	6.15		5.21	5.21	5.21	5.21	5.20	5.20	5.20	5.20	5.20	5.20										
21	13.0	9.63	8.36	7.66	7.21	6.89	6.65	6.46	6.31	6.18		5.24	5.24	5.24	5.23	5.23	5.23	5.23	5.23	5.23	5.23										

Figure 22. All Total Cost Points - Source 3

Also, since the input distributions, costs, and policy variables are the same for the inventory simulation process of Chapter IV and source number 1, the simulation process yields a verification of the results obtained here. This will be discussed more fully in the next chapter in connection with a discussion of decision making in the static environment.

CHAPTER VIII

OPERATIONAL COMPUTATIONS

The scheme developed in the previous chapter was useful in determining the expected total cost associated with each procurement level, procurement quantity, and procurement source combination. The results were presented in the form of total cost surfaces, one surface corresponding to each source alternative. This chapter has as its objective the solution for the optimal inventory policy without involving the lengthy printout of the entire surface. Application of the optimal inventory policy to decision making in the static and the dynamic environment will be demonstrated. Finally, the methods of sensitivity analysis will be introduced.

Operational Computations Program

The digital computer program of Appendix D-2 is a modification of the program described in the previous chapter. It has as its purpose the finding of the minimum cost point for each surface under consideration. The program package utilizes the same inputs that were used in developing the entire surface and is assembled in the following order.

(1) drum zero cards

(2) operational computations program

(3) log-antilog subroutine

(4) transfer card (0301)

(5) SSUBM deck for source 1

(6) distribution identification card for source 1

(7) parameter and cost card for source 1

(8) price break card for source 1

(9) item cost card for source 1

(10) SSUBM deck for source 2

(11) distribution identification card for source 2

(12) parameter and cost card for source 2

(13) price break card for source 2

(14) item cost card for source 2

(15) SSUBM deck for source 3

(16) distribution identification card for source 3

(17) parameter and cost card for source 3

(18) manufacturing progress card for source 3.

After loading of the program package outlined above, the computational process will begin. The program will find the minimum total cost point for one surface at a time, and will print the results in the format of Appendix D-3. Appendix D-1 gives the required inputs for the operational computations program corresponding to the requirements established by the examples of the following sections and is a printout of 8 word cards.

Static Computations

Assume that a supplier, as was represented in Figure 1 (page 8) is confronted with the three source alternatives described in the previous chapter. The demand, lead time, and cost environment is as was outlined in Appendix C-1. Under these conditions, the supplier will need to know:

(1) WHEN to procure (PL)

(2) HOW MUCH to procure (PQ)

(3) FROM WHAT SOURCE to procure (PS)

so that the inventory system under his management will operate at a minimum expected total cost. The surfaces developed in the previous chapter gave information that allowed identification of 10, 16, and source 1 as the values that will lead to this expected minimum.

The computer program of Appendix D-2 utilizes the input parameters and costs shown in Appendix D-1, together with the appropriate SSUBM decks of Appendix B-3, and yields the three line printout of each section in Appendix D-3. Visual comparison of the three total cost values exhibited in the first section yields a decision to procure from source 1. The PL and PQ coordinates giving rise to this expected total cost value are 10 and 16. Therefore, it is evident that the optimal inventory policy is that policy stating that procurement action should be initiated when the stock on hand plus the stock on order falls to or

below 10 units, that the procurement quantity should be 16 units, and that the procurement source should be source 1. This agrees with the results of the previous chapter. In fact, note that each line of the three line printout is identical with the PL - PQ line on each surface that gives the minimum total cost point for that surface.

Assume next, that the demand, lead time, cost, and source environment does not change over time. Under these static or steady state conditions, the supplier will maintain the inventory policy of initiating procurement action when the stock level drops to or below 10 units, will procure 16 units, and will procure from source 1. Maintenance of this policy over time in the static environment described will result in the inventory flow shown in Figure 23. The daily activity exhibited is a 360 period sample drawn at random from the inventory flow simulation of Chapter IV. This is justified since the simulation corresponds exactly to the inventory policy and inputs of this example (compare Appendix A-1, C-1, and D-1).

Close study of the 360 period sample indicates that the process is stochastic; that is, is composed of random elements. Of these, the procurement frequency, the total stock per cycle, and the final stock position at the end of a cycle are visible. These elements were histogrammed in Figure 5 (page 37), Figure 6 (page 37), and Figure 7 (page 38), respectively. The expected value of each element, based on the 6000 cycles simulated, was indicated in these figures.

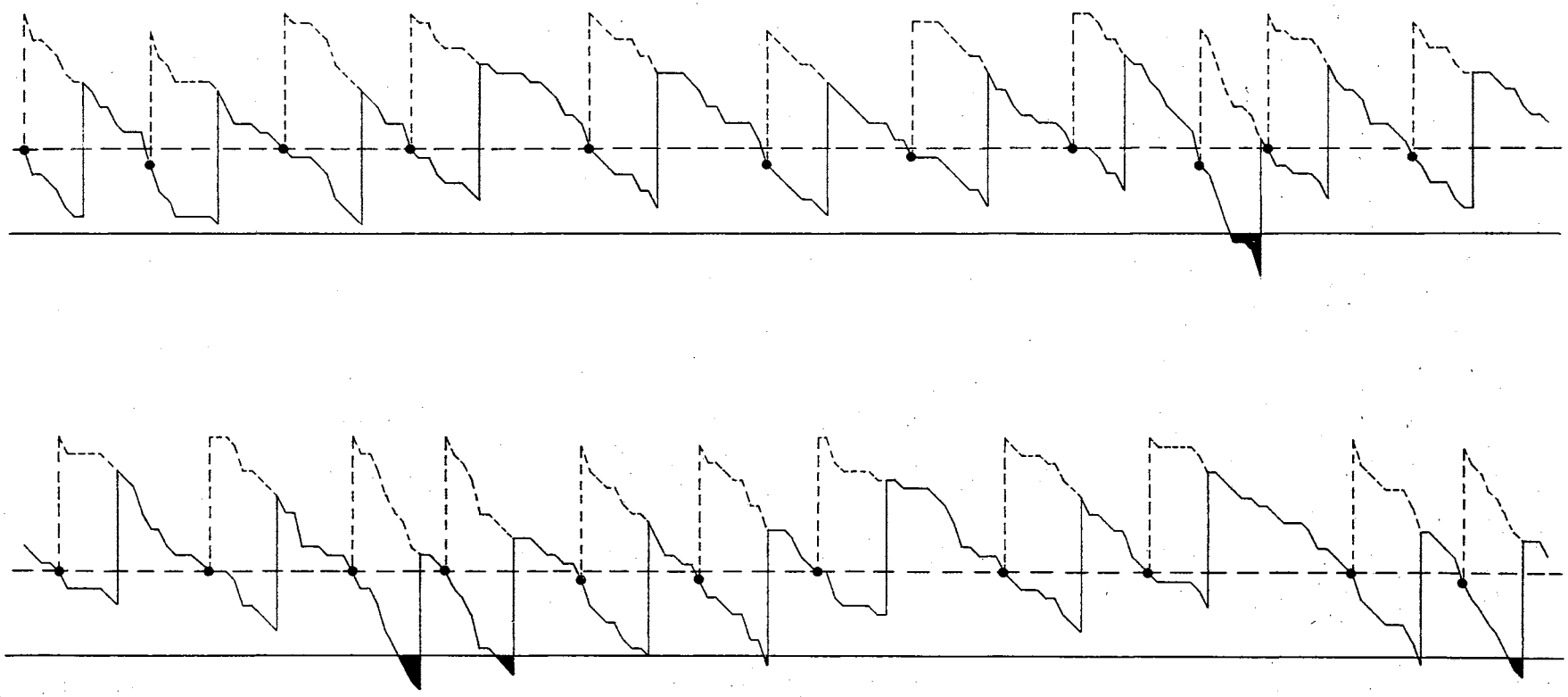


Figure 23. Inventory Flow in the Static Environment

A fourth random variable, the total cost per period, is not visible since it is not a part of the system geometry, but is a function of it. Figure 8 (page 38) is the histogram of this variable with an indicated expected value of $4.41. Discrepancies between the derived and the simulated values for PF, TS, and QSUBF were indicated and discussed earlier. The discrepancy of $0.02 in the derived and simulated value for the total expected period cost is a result of these former disagreements.

An inventory system operating under the inventory policy of the Chapter IV simulation and as used in the example of this chapter will experience an average long run cost of $4.41 per period. No other inventory policy will result in a lower expected total cost than this. Therefore, the policy of initiating procurement action when the stock level falls to or below 10 units, for a procurement quantity of 16 units, from procurement source 1 is designated the optimal inventory policy.

Dynamic Computations

Assume that the supplier is confronted with the usual dynamic environment, and that this environment is as was specified by the previous section. As time progresses, the statistical properties of demand and lead time will change, and the costs associated with the inventory process will vary. It is assumed, for this example, that the supplier will review the pertinent environment elements every 30 periods.

Under these dynamic conditions, the supplier must recompute the optimal inventory policy every 30 periods. Each set of input elements is assumed to represent the actual values for the time period considered. Therefore, when an inventory decision must be made, it will be made on the basis of the data pertaining to the review period in which the decision falls. For this example, the data of Appendix D-1 corresponds to 6 review periods with the optimal inventory policy for each of these periods given in Appendix D-3.

Figure 24 illustrates inventory flow in the dynamic environment. The procurement level, procurement quantity, and procurement source were determined from the conditions assumed in Appendix D-1. The stock position for each period was determined by sampling from the distributions of Appendix A-1; their parameters being given in Appendix D-1. The optimal inventory policy of Appendix D-3 was used in determining the procurement level, the procurement quantity, and the procurement source for the various review periods.

Rarely, if ever, will the estimated environmental elements correspond to the actual at any point in time. Discrepancies will arise, in part, from the inability of the estimator to accurately determine the elements' true value and, in part, from the failure of the estimator to be applied continuously. The latter factor is a function of the necessity to balance the cost of frequent review

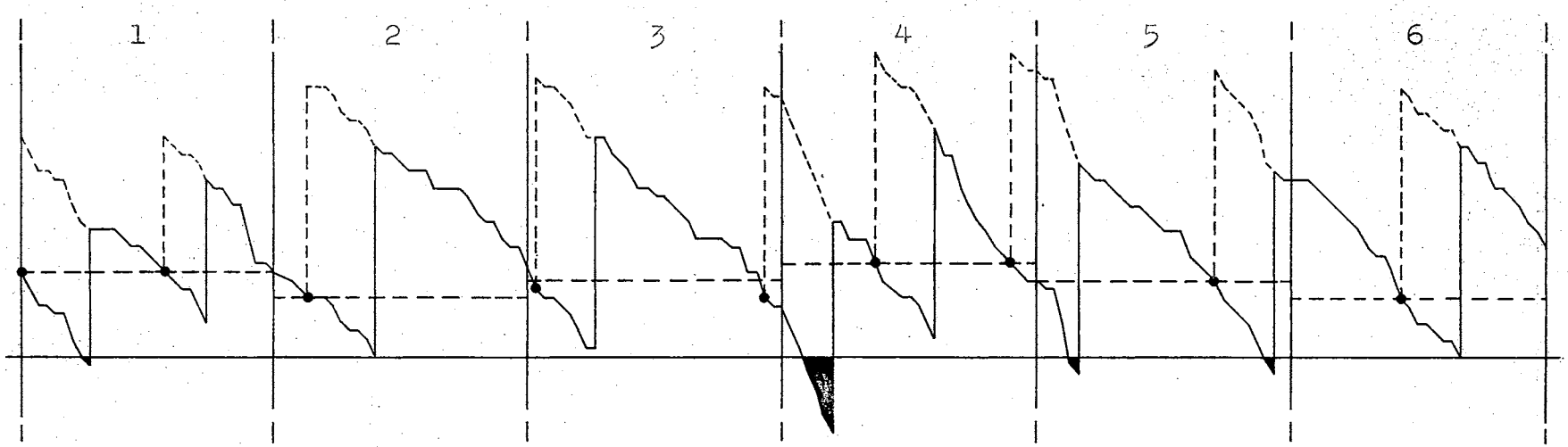


Figure 24. Inventory Flow in the Dynamic Environment

against the cost incurred due to lack of accurate data. The effect of errors in the estimate of certain input elements on total cost will be discussed in the next section.

Sensitivity Analysis

Total cost surface 1 of the previous paragraph gave rise to an optimal inventory policy of PL = 10, PQ = 16, and PS = 1. Entering into the total cost value for this policy of $4.39 was the item cost, the procurement cost, the holding cost, and the shortage cost.

Table II indicates the effect of changes in these costs on the actual cost associated with the inventory process. The digital computer program of this chapter was used to find the procurement level, procurement quantity, and minimum cost corresponding to the new cost indicated. These results are tabulated in the PL, PQ, and minimum columns. The policy as tabulated would be the policy under which the inventory system would be operating if the changes in the costs were known to the inventory manager. The minimum cost corresponding to each policy would be the cost experienced by the system under the changed cost.

However, the inventory manager is unaware that the actual cost is different from the estimated. As a result, he operates the inventory system under the PL = 10, PQ = 16 policy, and believes that he is experiencing a total period cost of $4.39. Actually, his total period cost is as tabulated under the column labled actual in Table II. These

TABLE II

MINIMUM AND ACTUAL COSTS

% CHANGE	ITEM COST PL	PQ	MINIMUM	ACTUAL	PROCUREMENT COST PL	PQ	MINIMUM	ACTUAL
-32	7	26	2.96	3.02	11	13	4.33	4.34
-16	6	26	3.69	3.71	11	14	4.36	4.36
- 8	6	25	4.03	4.04	10	16	4.37	4.38
- 4	6	25	4.20	4.22	10	16	4.38	4.38
- 2	6	25	4.29	4.30	10	16	4.39	4.39
0	10	16	4.39	4.39	10	16	4.39	4.39
2	10	16	4.48	4.47	10	16	4.39	4.39
4	10	16	4.56	4.56	10	16	4.39	4.40
8	10	15	4.73	4.73	6	25	4.38	4.40
16	10	15	5.07	5.07	6	25	4.39	4.42
32	10	14	5.75	5.75	6	25	4.41	4.44
% CHANGE	HOLDING COST PL	PQ	MINIMUM	ACTUAL	SHORTAGE COST PL	PQ	MINIMUM	ACTUAL
-32	7	26	4.25	4.30	4	25	4.35	4.37
-16	6	26	4.33	4.35	5	25	4.37	4.38
- 8	6	25	4.35	4.37	10	16	4.38	4.39
- 4	6	25	4.36	4.38	10	16	4.39	4.39
- 2	6	25	4.36	4.38	10	16	4.39	4.39
0	10	16	4.39	4.39	10	16	4.39	4.39
2	10	16	4.40	4.40	10	16	4.39	4.39
4	10	16	4.40	4.40	6	25	4.38	4.39
8	10	15	4.41	4.41	6	25	4.39	4.39
16	10	15	4.43	4.43	11	15	4.40	4.40
32	10	14	4.47	4.48	11	16	4.40	4.41

values were computed from the total cost function, Equation (7.5). The difference between the minimum cost and the actual cost is the penalty incurred in the incorrect estimate of the cost in question.

Close study of Table II reveals that these differences are insignificant for changes of 16 and less per cent. Even the 32 per cent change did not bring about a difference that was serious. Therefore, it may be concluded that, for the surface investigated, total cost is not very sensitive to changes in the cost inputs. This fact together with the flat nature of the total cost surfaces lead to the conclusion that this scheme will yield good results in spite of errors in estimation of the input elements.

CHAPTER IX

SUMMARY AND CONCLUSIONS

This concluding chapter will be composed of three sections. The first will summarize the concept presented in this treatise by briefly reviewing the contributions of each chapter. The second will be devoted to a critical analysis of the scheme for the purpose of describing its strengths and its weaknesses. Proposals for further study are presented in the last section.

Summary

This investigation was based upon the supposition that any item is available from more than one source. This supposition led to the consideration of source parameters which, in turn, resulted in the extension of inventory policy to include source decisions. A computer oriented algorithm was developed to support the multisource item concept and to find the optimal inventory policy for the item considered in the multisource context.

Chapter VII demonstrated that each source gives rise to a total cost surface and that each surface has a minimum cost point. Associated with each minimum cost point was a procurement level - procurement quantity coordinate,

the values for which gave the optimal inventory policy for the source to which the surface applied. If the item is restricted to one source, the PL and PQ values found gave the optimal inventory policy for the unisource item. The optimal inventory policy for the multisource item was that policy assigning values to PL, PQ, and PS so that the probability of minimizing the sum of all costs associated with the inventory process is maximized.

Chapter VIII described a computer program that found the optimal inventory policy without involving a printout of all total cost points. This program was used to demonstrate the application of the multisource inventory item concept to decision making in the static and in the dynamic environment.

The computer programs of Chapter VII and VIII utilized the derivations of Chapters V and VI. Those of Chapter V were derived from the expected geometric relationships of the inventory system for any given set of input values. The derivation of the expected number of shortages per cycle, given in Chapter VI, was based upon the forms and parameters of the distributions of demand and lead time.

Verification of the derivations of Chapters V and VI was accomplished by reference to the converged values of the inventory flow simulation scheme of Chapter IV. Also, the simulation provided a value for the expected total cost per cycle which served as a check for this element as derived in Chapter VII.

Chapter III was devoted to a discussion of the input elements required in the determination of optimal inventory policy. It was admitted there that accurate determination of certain of these inputs will be difficult. However, it was indicated in Chapter VIII that good results may be obtained even though the estimates disagree with the actual values.

Chapters I and II were introductory in nature. They had as their purpose the justification for the approach to the inventory problem as pursued in this investigation.

Conclusions

The concept presented in this dissertation was unified in its approach to the determination of the procurement level, the procurement quantity, and the procurement source. The number of simplifying assumptions was kept to a minimum so that the concept may be applied to a wide range of inventory situations.

By avoiding complicated mathematical techniques, the concept presented is easily understood. It is compatible with existing computerized inventory record-keeping systems, and, as such may be more easily utilized than a mathematical model.

Inventory policy, as derived in this investigation, agreed closely with a simulated inventory flow process. The discrepancy between the derived and the simulated results was small enough to be of insignificant consequence in real world applications.

Study of the total cost surfaces reveals that they are quite flat in the region of their minimum points. This phenomenon, together with the insensitivity of total system cost to changes in the input cost elements, lead to the conclusion that this concept will yield good results in spite of inaccuracies in estimation.

Current inventory management techniques do not require as complete data for their operation as does the algorithm developed in this investigation. Specifically, this concept requires data on the form and parameters of the distributions of demand and lead time that is not ordinarily used in existing decision models. However, with the use of high speed electronic computers in the control of inventory the estimation of these inputs should become routine. The justification for a technique that considers these inputs arises from the increased accuracy with which inventory policy can be determined.

It must be concluded that the algorithm as presented in this dissertation requires too much computer time to find the optimal inventory policy. An item-by-item application of the computational scheme to a large inventory would require excessive computer time and would entail excessive cost. Several suggested methods of reducing this time are presented in the next section.

It must also be concluded that, while the scheme is quite general in its consideration of a wide range of situations, it does not consider the following:

(1) Loss of all or part of the demand that is unsatisfied.

(2) Restrictions on the maximum or minimum size of the procurement quantity.

(3) Procurement when the backlog of unsatisfied demands becomes negative.

(4) Restrictions on the aggregate number of units to be stored in a given space.

(5) Optimization of the expenditure of capital in the stocking of an aggregate inventory.

Use of the numerical results obtained from this derivation should be made with caution. The algorithm will not replace the decision maker, for many important factors are not taken into consideration. As an example of this, recall the decision of Chapter VIII to procure from source 1 during the first decision period. This decision was based upon the fact that source 1 exhibited the lowest total cost. An alert manager would have noticed that if source 3 was activated, manufacturing progress would reduce the total cost of the system and, at some point, it would become the least cost source alternative. He would then balance the initial penalty incurred in dealing with source 3 against the expected saving that would occur later. For a demand period of a reasonable length, it is almost certain that source 3 would have been chosen regardless of the numerical results obtained for the initial decision period. The full meaning of Professor Thuesen's

(3) statement, "Figure as far as you can, then guess," should be applied in any attempt to use this algorithm in making inventory management decisions.

Proposals for Further Study

The multisource item concept presented provides a sound approach to the derivation of optimal inventory policy. Its use allows extension of inventory policy to include source decisions. In addition, the concept embraces techniques for dealing with variation in demand and lead time, the simultaneous determination of the policy variables, and the case where lead time is longer than lot time.

It is proposed that the basic concept be retained in any attempt to refine or simplify the algorithm. Specifically, refinement of the following facets would prove of value:

(1) Derive an expression for the expected total stock per cycle that is not bias and that takes into consideration the reduction in stock due to procurement below the procurement level.

(2) Modify the derivation of the expected number of shortages per cycle so that the effect of procurement below the procurement level is considered.

(3) Include a procedure that will allow for a

price break schedule for the direct material used in computing the item cost for the manufacturing alternative.

(4) Make provision for allowing for loss of all or part of the unsatisfied demands and for charging the shortage cost accordingly.

(5) Allow for a restriction on the maximum or minimum size of the procurement quantity.

(6) Make provision for procurement when the backlog of unsatisfied demands becomes negative.

Application of the concept to decision making would be facilitated if it were simplified. Specifically, simplification would be fruitful in the following areas:

(1) Derive an approximate mathematical expression for the expected number of shortages per cycle so that partial differentiation may be used to find the minimum cost points.

(2) Investigate the application of the central limit theorem method for finding the lead time demand distribution so that the distributions of demand and lead time do not have to be known.

Reduction of the time required to find the optimal inventory policy would further facilitate the application of this concept. Study of the following possible means of speeding the solution is suggested:

(1) Consider the use of magnetic tape or disc

storage for the expected number of shortages per cycle so that search time will be decreased.

(2) Completely tabulate the optimal inventory policy for a wide range of input distributions, parameters, and costs so that a table look-up operation will yield the optimal policy directly.

(3) Group the aggregate inventory into classes and apply the concept to the somewhat homogeneous groups instead of to individual items.

(4) Write the total cost equation in a form that will embrace an approximation for the expected total number of shortages per cycle so that partial differentiation can be used to find the minimum cost points.

It is suggested that the material presented in this treatise provides the framework for a computer oriented inventory management game. As a training device, such a game would play the individual against the computer in the determination of optimal inventory policy for a hypothetical system. Since the computer would almost always win, when the total cost of the individuals decisions are compared with those of the computer, it is suggested that the individual with the least cost differential be designated the winner.

Finally, it would be of interest to determine optimal inventory policy by this scheme parallel to a real world inventory system. The actual total system cost experienced by the real world system could be compared with the total cost that would have resulted if this scheme was used. A detailed study of the savings effected over a trial period would prove the worth of this algorithm in the determination of optimal inventory policy.

BIBLIOGRAPHY

(1) Whitin, T. M. The Theory of Inventory Management. 2nd Ed. Princeton, N. Y.: Princeton University Press, 1957.

(2) Harris, F. W., quoted by F. E. Raymond. Quantity and Economy in Manufacture. New York, N. Y.: McGraw-Hill Book Co., Inc., 1931.

(3) Thuesen, H. G. Engineering Economy. 2nd Ed. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1957.

(4) Churchman, C. W., R. L. Ackoff, and E. L. Arnoff. Introduction to Operations Research. New York, N. Y.: John Wiley and Sons, Inc., 1957.

(5) Welch, W. E. Tested Scientific Inventory Control. Greenwich, Conn.: Management Publishing Corp., 1956.

(6) Magee, J. F. Production Planning and Inventory Control. New York, N. Y.: McGraw-Hill Book Co., Inc., 1958.

(7) Fabrycky, W. J. Order Point Determination for Statistically Distributed Lead Time and Demand. Stillwater, Oklahoma, I. E. 610 Report, School of Industrial Engineering and Management, 1960.

(8) Ekey, D. C., J. B. Talbird, and T. L. Newberry. "Inventory Reorder Points for Conditions of Variable Demand and Lead Time," Journal of Industrial Engineering, Volume XII, No. 1, 1961.

(9) Fetter, R. B., and W. C. Dalleck. Decision Models for Inventory Management. Homewood, Illinois: Richard D. Irwin, Inc., 1961.

(10) Harling, J., and M. J. Bramson. Level of Protection Afforded by Stocks (Inventories) in a Manufacturing Industry. Baltimore, Md.: Proceedings of the First International Conference of Operations Research, Operations Research Society of America, 1957.

(11) Fabrycky, W. J. Repair-Salvage Decision Criteria for the Reparable Item. Oklahoma City, Okla., Operations Analysis Office, Working Paper No. 3 Unclassified, 1960.

(12) Arrow, K. J., S. Karlin and H. Scarf. Studies in the Mathematical Theory of Inventory and Production. Stanford, California: Stanford University Press, 1958.

(13) Dvoretzky, A., J. Kiefer, and J. Wolfwitz. "The Inventory Problem," Econometrica, April, 1952.

(14) Dvoretzky, A., J. Kiefer and J. Wolfwitz. "On the Optimal Character of the (A,S) Policy in Inventory Theory," Econometrica, Oct., 1953.

(15) Holt, C. C., et al. Planning Production Inventories and Work Force. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960.

(16) Clark, C. E. and A. J. Rowe. "Inventory Policies and Related Numerical Approximations," Journal of Industrial Engineering, Volume XI, No. 1, 1960.

(17) Brown, B. B., and M. A. Geisler. Analysis of the Demand Patterns for B-47 Airframe Parts at Air Base Level. Santa Monica, Calif.: The RAND Corp., RM-1297, 1954.

(18) Beckmann, M. J., and F. Bobkoski. "Airline Demand: An Analysis of Some Frequency Distributions," Naval Research Logistics Quarterly, Vol. 5, No. 1, March, 1958.

(19) Ferguson, A. R., and L. Fisher. Stockage Policies for Medium and Low Cost Parts. Santa Monica, California: The RAND Corporation, RM-1962, 1958.

(20) Brown, R. G. Statistical Forecasting for Inventory Control. New York, N. Y.: McGraw-Hill Book Co., Inc., 1959.

(21) Aitchison, J., and J. A. C. Brown. The Lognormal Distribution. Cambridge, England: Cambridge University Press, 1957.

(22) Specthrie, S. W. Industrial Accounting. 2nd Ed. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1959.

(23) Torgersen, P. E. and W. M. Zimmerman. The Manufacturing Progress Function. Stillwater, Oklahoma (Unpublished Monograph), 1961.

(24) Hoel, P. G. Introduction to Mathematical Statistics. 2nd Ed. New York, N. Y.: John Wiley and Sons, Inc., 1954.

(25) Work Projects Administration. Tables of Probability Functions, Vol. I. New York, N. Y., 1941.

(26) Molina, E. C. Poisson's Exponential Binomial Limit. New York, N. Y.: VanNostrand Company, 1947.

APPENDIXES

FOREWORD TO THE APPENDIXES

The programs presented in the following four-section Appendix were written in SOAP (Symbolic Optimum Assembly Program). The computer to which they apply is the International Business Machines Type 650 Magnetic Drum Data Processing Machine. The programs require that the computer be equipped with the following devices:

(1) IBM 407 accounting machine

(2) IBM 433 card read-punch

(3) 60 words of core storage

(4) 3 four digit index registers

(5) A floating decimal device.

Each program is preceded by a section giving the required input and followed by a section detailing the output. All input and output is presented in floating point notation. Each term consists of 10 digits and a sign. The first 8 digits are the mantissa and the last two a characteristic. The decimal is at the extreme left of the mantissa when the characteristic is 50. For each units digit added to the characteristic, the decimal moves one place to the right, and for each units digit subtracted from 50, the decimal moves one place to the left. Examples are:

$$3000000052 = 30.000$$

$$4300000049 = 0.043 .$$

Note that the last two digits are simply decimal operators and are not part of the value. The mantissa is the value adjusted in magnitude by the value of the two digit characteristic.

The numerical information presented in these Appendixes contains material in support of the concept developed in the text. Close study of the four computer programs will yield a detailed description of the computational process, and will give the reader a more thorough understanding of the concept than may be had by study of the text material only.

APPENDIX A

INVENTORY FLOW SIMULATION

APPENDIX A-1

INPUT DISTRIBUTIONS AND COSTS

POISSON DEMAND DISTRIBUTIONS

DSUBM = 1.00 : DSUBV = 1.00

0000	36	7879	0000
0001	73	5758	0001
0002	91	9698	0002
0003	98	1011	0003
0004	99	6339	0004
0005	99	9405	0005
0006	99	9916	0006
0007	99	9989	0007
0008	99	9998	0008
0009	99	9999	0009

DSUBM = 1.10 : DSUBV = 1.10

0000	33	2871	0000
0001	69	9029	0001
0002	90	0416	0002
0003	97	4258	0003
0004	99	4565	0004
0005	99	9032	0005
0006	99	9851	0006
0007	99	9980	0007
0008	99	9998	0008
0009	99	9999	0009

DSUBM = 1.20 : DSUBV = 1.20

0000	30	1194	0000
0001	66	2627	0001
0002	87	9487	0002
0003	96	6231	0003
0004	99	2254	0004
0005	99	8500	0005
0006	99	9749	0006
0007	99	9962	0007
0008	99	9995	0008
0009	99	9999	0009

DSUBM = 1.30 : DSUBV = 1.30

0000	27	2532	0000
0001	62	6823	0001
0002	85	7112	0002
0003	95	6904	0003
0004	98	9336	0004
0005	99	7768	0005
0006	99	9595	0006
0007	99	9934	0007
0008	99	9989	0008
0009	99	9999	0009

DSUBM = 1.40 : DSUBV = 1.40

0000	24	6597	0000
0001	59	1833	0001
0002	83	3498	0002
0003	94	6275	0003
0004	98	5747	0004
0005	99	6799	0005
0006	99	9378	0006
0007	99	9894	0007
0008	99	9984	0008
0009	99	9998	0009
0010	99	9999	0010

DSUBM = 1.50 : DSUBV = 1.50

0000	22	3130	0000
0001	55	7825	0001
0002	80	8846	0002
0003	93	4357	0003
0004	98	1424	0004
0005	99	5544	0005
0006	99	9074	0006
0007	99	9830	0007
0008	99	9972	0008
0009	99	9996	0009
0010	99	9999	0010

DSUBM = 1.60 : DSUBV = 1.60

0000	20	1897	0000
0001	52	4931	0001
0002	78	3359	0002
0003	92	1187	0003
0004	97	6318	0004
0005	99	3960	0005
0006	99	8665	0006
0007	99	9740	0007
0008	99	9955	0008
0009	99	9993	0009
0010	99	9999	0010

DSUBM = 1.70 : DSUBV = 1.70

0000	18	2684	0000
0001	49	3246	0001
0002	75	7224	0002
0003	90	6811	0003
0004	97	0386	0004
0005	99	2001	0005
0006	99	8125	0006
0007	99	9612	0007
0008	99	9928	0008
0009	99	9988	0009

0010	99	9998	0010
0011	99	9999	0011

DSUBM = 1.80 : DSUBV = 1.80

0000	16	5299	0000
0001	46	2837	0001
0002	73	0621	0002
0003	89	1292	0003
0004	96	3594	0004
0005	98	9623	0005
0006	99	7432	0006
0007	99	9440	0007
0008	99	9892	0008
0009	99	9982	0009
0010	99	9998	0010
0011	99	9999	0011

DSUBM = 1.90 : DSUBV = 1.90

0000	14	9569	0000
0001	43	3749	0001
0002	70	3720	0002
0003	87	4702	0003
0004	95	5918	0004
0005	98	6780	0005
0006	99	6553	0006
0007	99	9206	0007
0008	99	9836	0008
0009	99	9969	0009
0010	99	9994	0010
0011	99	9999	0011

DSUBM = 2.00 : DSUBV = 2.00

0000	13	5335	0000
0001	40	6006	0001
0002	67	6677	0002
0003	85	7124	0003
0004	94	7348	0004
0005	98	3437	0005
0006	99	5467	0006
0007	99	8904	0007
0008	99	9763	0008
0009	99	9954	0009
0010	99	9992	0010
0011	99	9999	0011

LOGNORMAL LEAD TIME DISTRIBUTIONS

LSUBM = 4.00 : V(LOG LSUBX) = 0.00

0100	00	0000 0001
0101	00	0000 0001
0102	00	0000 0002
0103	00	0000 0003
0104	99	9999 0004

LSUBM = 4.03 : V(LOG LSUBX) = 0.05

0100	00	0000 0001
0101	00	0000 0001
0102	00	0022 0002
0103	12	3024 0003
0104	84	6846 0004
0105	99	7162 0005
0106	99	9987 0006
0107	99	9999 0007

LSUBM = 4.11 : V(LOG LSUBX) = 0.10

0100	00	0000 0001
0101	00	0010 0001
0102	02	0625 0002
0103	28	0991 0003
0104	69	5499 0004
0105	91	6667 0005
0106	98	2527 0006
0107	99	6833 0007
0108	99	9469 0008
0109	99	9914 0009
0110	99	9999 0010

LSUBM = 5.00 : V(LOG LSUBX) = 0.00

0100	00	0000 0001
0101	00	0000 0001
0102	00	0000 0002
0103	00	0000 0003
0104	00	0000 0004
0105	99	9999 0005

LSUBM = 5.03 : V(LOG LSUBX) = 0.05

0100	00	0000 0001
0101	00	0000 0001
0102	00	0000 0002
0103	00	0974 0003
0104	18	0069 0004
0105	79	6136 0005
0106	98	8666 0006

```
0107    99 9786 0007
0108    99 9999 0008
```

LSUBM = 5.13 : V(LOG LSUBX) = 0.10

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 1306 0002
0103    06 0691 0003
0104    32 3620 0004
0105    66 0526 0005
0106    87 2648 0006
0107    96 0881 0007
0108    98 9388 0008
0109    99 7348 0009
0110    99 9363 0010
0111    99 9851 0011
0112    99 9999 0012
```

LSUBM = 6.00 : V(LOG LSUBX) = 0.00

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0000 0002
0103    00 0000 0003
0104    00 0000 0004
0105    00 0000 0005
0106    99 9999 0006
```

LSUBM = 6.04 : V(LOG LSUBX) = 0.05

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0000 0002
0103    00 0001 0003
0104    00 6227 0004
0105    22 4884 0005
0106    75 6535 0006
0107    97 3688 0007
0108    99 8757 0008
0109    99 9967 0009
0110    99 9999 0010
```

LSUBM = 6.16 : V(LOG LSUBX) = 0.10

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0072 0002
0103    00 9616 0003
0104    10 5832 0004
0105    35 2752 0005
0106    63 5929 0006
0107    83 3752 0007
0108    93 4860 0008
```

0109	97 7033	0009
0110	99 2450	0010
0111	99 7636	0011
0112	99 9283	0012
0113	99 9786	0013
0114	99 9936	0014
0115	99 9999	0015

LSUBM = 7.00 : V(LOG LSUBX) = 0.00

0100	00 0000	0001
0101	00 0000	0001
0102	00 0000	0002
0103	00 0000	0003
0104	00 0000	0004
0105	00 0000	0005
0106	00 0000	0006
0107	99 9999	0007

LSUBM = 7.05 : V(LOG LSUBX) = 0.05

0100	00 0000	0001
0101	00 0000	0001
0102	00 0000	0002
0103	00 0000	0003
0104	00 0062	0004
0105	01 8085	0005
0106	25 9885	0006
0107	72 5513	0007
0108	95 4102	0008
0109	99 6011	0009
0110	99 9786	0010
0111	99 9999	0011

LSUBM = 7.19 : V(LOG LSUBX) = 0.10

0100	00 0000	0001
0101	00 0000	0001
0102	00 0004	0002
0103	00 1306	0003
0104	02 7492	0004
0105	14 7550	0005
0106	37 3802	0006
0107	61 7759	0007
0108	80 0441	0008
0109	90 7580	0009
0110	96 0881	0010
0111	98 4458	0011
0112	99 4099	0012
0113	99 7827	0013
0114	99 9219	0014
0115	99 9722	0015
0116	99 9902	0016
0117	99 9965	0017

```
0118    99 9999 0018
```

LSUBM = 8.00 : V(LOG LSUBX) = 0.00

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0000 0002
0103    00 0000 0003
0104    00 0000 0004
0105    00 0000 0005
0106    00 0000 0006
0107    00 0000 0007
0108    99 9999 0008
```

LSUBM = 8.05 : V(LOG LSUBX) = 0.05

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0000 0002
0103    00 0000 0003
0104    00 0000 0004
0105    00 0567 0005
0106    03 5615 0006
0107    28 7535 0007
0108    70 0764 0008
0109    93 2281 0009
0110    99 0911 0010
0111    99 9189 0011
0112    99 9947 0012
0113    99 9999 0013
```

LSUBM = 8.21 : V(LOG LSUBX) = 0.10

```
0100    00 0000 0001
0101    00 0000 0001
0102    00 0000 0002
0103    00 0165 0003
0104    00 6227 0004
0105    05 1868 0005
0106    18 3581 0006
0107    38 9623 0007
0108    60 3840 0008
0109    77 2257 0009
0110    88 1198 0010
0111    94 2487 0011
0112    97 3688 0012
0113    98 8456 0013
0114    99 5102 0014
0115    99 7960 0015
0116    99 9166 0016
0117    99 9662 0017
0118    99 9864 0018
0119    99 9945 0019
0120    99 9999 0020
```

MINUS ONE CARD

Word 1 - 1000000051 minus - a constant

Word 2 - 1000000051 minus - a constant

Word 3 - 1000000051 minus - a constant

Word 4 - 1000000051 minus - a constant

Word 5 - 1000000051 minus - a constant

Word 6 - 1000000051 minus - a constant

Word 7 - 1000000051 minus - a constant

Word 8 - 1000000051 minus - a constant

DISTRIBUTION IDENTIFICATION CARD

Word 1 - 0000001000 - demand distribution identification

Word 2 - 1000000051 - demand distribution mean

Word 3 - 1000000051 - demand distribution variance

Word 4 - 1000000051 - a constant

Word 5 - 2000000051 - a constant

Word 6 - 0000002000 - lead time distribution identification

Word 7 - 8050000051 - lead time distribution mean

Word 8 - 5000000049 - log lead time distribution variance

RULE AND COST CARD

Word 1 - 1000000052 - procurement level

Word 2 - 1600000052 - procurement quantity

Word 3 - 0000000000 - a constant

Word 4 - 1120000053 - initial stock

Word 5 - 3900000051 - item cost

Word 6 - 2500000051 - procurement cost

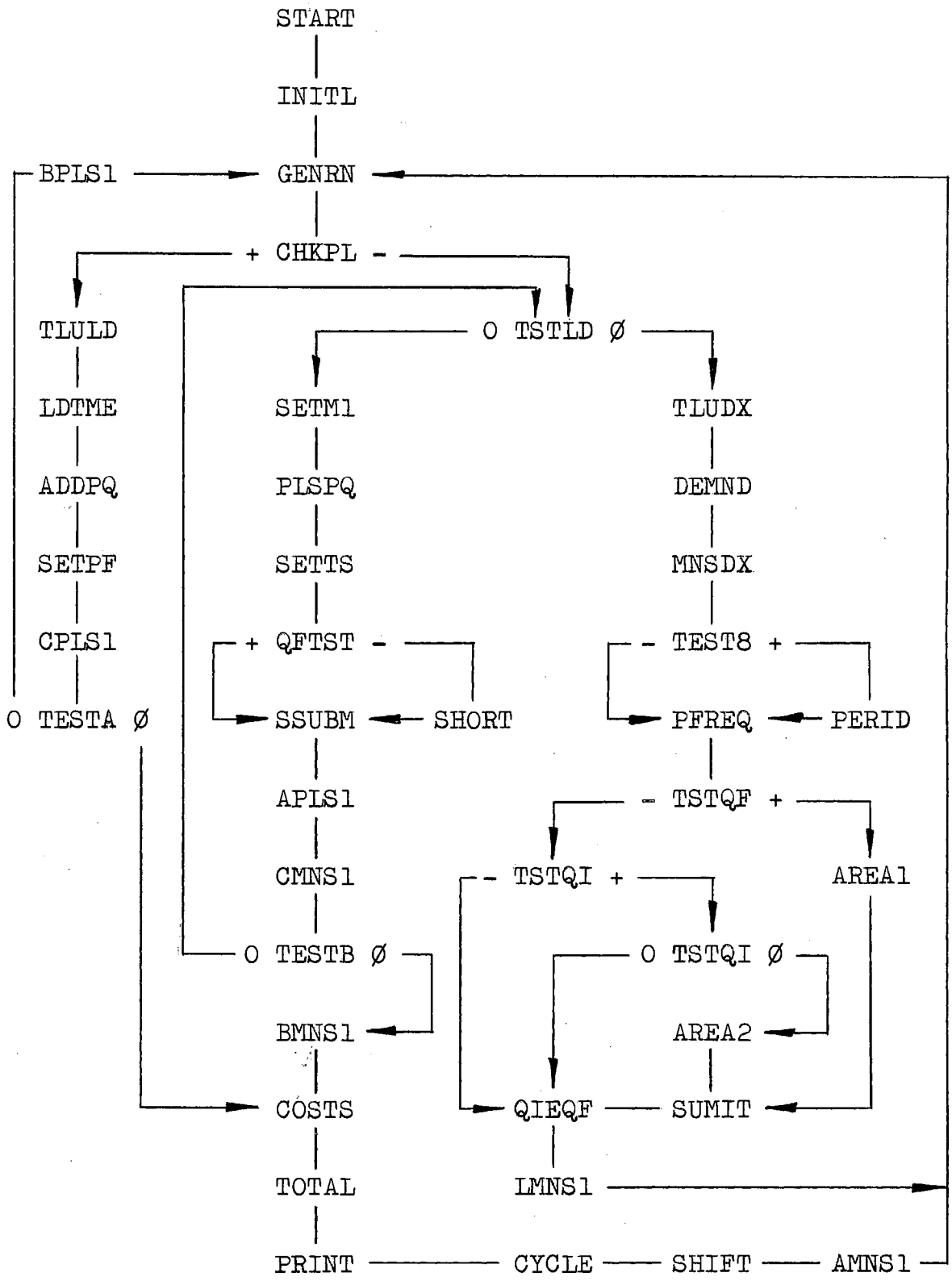
Word 7 - 7000000048 - holding cost

Word 8 - 2000000051 - shortage cost

APPENDIX A-2

INVENTORY FLOW SIMULATION PROGRAM

INVENTORY FLOW SIMULATION PROGRAM DIAGRAM



INVENTORY FLOW SIMULATION PROGRAM

```
 1                                          BLR   0000      0300
 2                                          BLR   1000      1999
 3                                          SYN   START     0301
 4 0301   70 9000 0351          START       RCD   9000
 5 0351   70 9030 0401                      RCD   9030
 6 0401   70 9040 0451                      RCD   9040      INITL
 7 0451   53 0001 0307          INITL       SXB   0001
 8 0307   27 9010 0312                      SET   9010
 9 0312   08 1000 0362                      LIB   1000
10 0362   27 9020 0317                      SET   9020
11 0317   08 1000 0412                      LIB   1000
12 0412   60 9033 0319                      RAU   9033
13 0319   21 9050 0327                      STU   9050
14 0327   20 9051 0334                      STL   9051
15 0334   60 9040 0341                      RAU   9040
16 0341   32 9042 0321                      FAD   9042
17 0321   21 9040 0329                      STU   9040
18 0329   21 0384 0337                      STU   QSUBI
19 0337   21 0342 0345                      STU   TSUBI
20 0345   69 9043 0501                      LDD   9043
21 0501   24 9020 0357                      STD   9020      GENRN
22 0357   60 0310 0315          GENRN       RAU   PRIME
23 0315   19 0318 0338                      MPY   DGITS
24 0338   20 0318 0371                      STL   DGITS
25 0371   65 8002 0379                      RAL   8002
26 0379   30 0004 0339                      SRT   0004
27 0339   35 0004 0349                      SLT   0004
28 0349   20 0303 0306                      STL   RANDM     CHKPL
29 0306   60 9040 0313          CHKPL       RAU   9040
30 0313   33 0342 0369                      FSB   TSUBI
31 0369   46 0322 0323                      BMI   TSTLD     TLULD
32 0323   65 0326 0331          TLULD       RAL   SKTN1
33 0331   69 0303 0356                      LDD   RANDM
34 0356   84 0100 8002                      TLU   0100      8002
35 0350   60 8003 0407          LDTME       RAU   8003
36 0407   35 0008 0325                      SLT   0008
37 0325   10 0328 0333                      AUP   FTTWO
38 0333   21 0388 0391                      STU   TEMP1
39 0391   60 9051 0399                      RAU   9051
40 0399   32 0388 0365                      FAD   TEMP1
41 0365   21 9600 0373                      STU   9000    C ADDPQ
42 0373   60 0342 0347          ADDPQ       RAU   TSUBI
43 0347   32 9041 0377                      FAD   9041
44 0377   21 0342 0395                      STU   TSUBI     SETPF
45 0395   69 9010 0551          SETPF       LDD   9010
46 0551   24 9052 0457                      STD   9052
47 0457   60 0360 0415                      RAU   TFREQ
48 0415   34 9050 0368                      FDV   9050
49 0368   21 9053 0375                      STU   9053      CPLS1
50 0375   58 0001 0381          CPLS1       AXC   0001      TESTA
51 0381   40 0434 0335          TESTA       NZA   COSTS     BPLS1
```

```
 52 0335    52 0001 0357        BPLS1  AXB    0001      GENRN
 53 0322    60 9000 0429        TSTLD  RAU    9000
 54 0429    45 0332 0383               NZE             OUT00
 55 0332    60 9001 0389               RAU    9001
 56 0389    45 0392 0343               NZE             OUT01
 57 0392    60 9002 0449               RAU    9002
 58 0449    45 0302 0353               NZE             OUT02
 59 0302    60 9003 0309               RAU    9003
 60 0309    45 0462 0363               NZE             OUT03
 61 0462    60 9004 0419               RAU    9004
 62 0419    45 0372 0423               NZE             OUT04
 63 0372    60 9005 0479               RAU    9005
 64 0479    45 0382 0433               NZE             OUT05
 65 0382    60 9006 0439               RAU    9006
 66 0439    45 0442 0393               NZE             OUT06
 67 0442    60 9007 0499               RAU    9007
 68 0499    45 0352 0403               NZE    TLUDX    SETM1
 69 0352    65 0305 0359        TLUDX  RAL    SKTN2
 70 0359    69 0303 0406               LDD    RANDM
 71 0406    84 0000 8002               TLU     0000     8002
 72 0400    60 8003 0507        DEMND  RAU     8003
 73 0507    35 0008 0425               SLT     0008
 74 0425    10 0328 0483               AUP    FTTWO
 75 0483    21 0388 0441               STU    TEMP1
 76 0441    60 9051 0549               RAU     9051
 77 0549    32 0388 0465               FAD    TEMP1
 78 0465    21 0320 0473               STU    DSUBX     MNSDX
 79 0473    60 0384 0489        MNSDX  RAU    QSUBI
 80 0489    33 0320 0397               FSB    DSUBX
 81 0397    21 0402 0355               STU    QSUBF
 82 0355    60 0342 0447               RAU    TSUBI
 83 0447    33 0320 0497               FSB    DSUBX
 84 0497    21 0452 0405               STU    TSUBF     TEST8
 85 0405    60 8000 0413        TEST8  RAU     8000
 86 0413    46 0316 0367               BMI    PFREQ     PERID
 87 0367    69 0320 0523        PERID  LDD    DSUBX
 88 0523    24 1814 0417               STD     1814
 89 0417    69 0384 0387               LDD    QSUBI
 90 0387    24 1816 0469               STD     1816
 91 0469    69 0402 0455               LDD    QSUBF
 92 0455    24 1817 0370               STD     1817
 93 0370    69 0342 0445               LDD    TSUBI
 94 0445    24 1819 0422               STD     1819
 95 0422    69 0452 0505               LDD    TSUBF
 96 0505    24 1820 0573               STD     1820
 97 0573    74 1813 0316               WR2     1813     PFREQ
 98 0316    60 9410 0623        PFREQ  RAU     9010 B
 99 0623    32 9033 0453               FAD     9033
100 0453    21 9410 0311               STU     9010 B
101 0311    60 0360 0515               RAU    TFREQ
102 0515    32 9033 0495               FAD     9033
103 0495    21 0360 0463               STU    TFREQ     TSTQF
104 0463    60 0402 0557        TSTQF  RAU    QSUBF
105 0557    46 0410 0361               BMI    TSTQI     AREA1
```

```
106 0361    60 0384 0539        AREA1   RAU   QSJBI
107 0539    32 0402 0529                FAD   QSUBF
108 0529    34 9034 0432                FDV    9034     SUMIT
109 0432    32 9220 0411        SUMIT   FAD    9020 A
110 0411    21 9220 0519                STU    9020 A   QIEQF
111 0410    60 0384 0589        TSTQI   RAU   QSUBI
112 0589    46 0519 0443                BMI   QIEQF
113 0443    45 0346 0519                NZE   AREA2     QIEQF
114 0346    61 0402 0607        AREA2   RSU   QSUBF
115 0607    34 0384 0484                FDV   QSUBI
116 0484    32 9033 0513                FAD    9033
117 0513    21 0418 0421                STU   TEMP3
118 0421    60 0384 0639                RAU   QSUBI
119 0639    34 9034 0492                FDV    9034
120 0492    34 0418 0432                FDV   TEMP3     SUMIT
121 0519    69 0402 0555        QIEQF   LDD   QSUBF
122 0555    24 0384 0437                STD   QSUBI
123 0437    69 0452 0605                LDD   TSUBF
124 0605    24 0342 0545                STD   TSUBI     LMNS1
125 0545    60 9000 0503        LMNS1   RAU    9000
126 0503    33 9033 0533                FSB    9033
127 0533    21 9000 0491                STU    9000
128 0491    60 9001 0599                RAU    9001
129 0599    33 9033 0579                FSB    9033
130 0579    21 9001 0487                STU    9001
131 0487    60 9002 0595                RAU    9002
132 0595    33 9033 0475                FSB    9033
133 0475    21 9002 0583                STU    9002
134 0583    60 9003 0541                RAU    9003
135 0541    33 9033 0471                FSB    9033
136 0471    21 9003 0629                STU    9003
137 0629    60 9004 0537                RAU    9004
138 0537    33 9033 0467                FSB    9033
139 0467    21 9004 0525                STU    9004
140 0525    60 9005 0633                RAU    9005
141 0633    33 9033 0563                FSB    9033
142 0563    21 9005 0521                STU    9005
143 0521    60 9006 0679                RAU    9006
144 0679    33 9033 0409                FSB    9033
145 0409    21 9006 0517                STU    9006
146 0517    60 9007 0575                RAU    9007
147 0575    33 9033 0655                FSB    9033
148 0655    21 9007 0357                STU    9007     GENRN
149 0383    69 9001 0689        OUT00   LDD    9001
150 0689    24 9000 0343                STD    9000     OUT01
151 0343    69 9002 0649        OUT01   LDD    9002
152 0649    24 9001 0353                STD    9001     OUT02
153 0353    69 9003 0459        OUT02   LDD    9003
154 0459    24 9002 0363                STD    9002     OUT03
155 0363    69 9004 0569        OUT03   LDD    9004
156 0569    24 9003 0423                STD    9003     OUT04
157 0423    69 9005 0729        OUT04   LDD    9005
158 0729    24 9004 0433                STD    9004     OUT05
159 0433    69 9006 0739        OUT05   LDD    9006
```

```
160 0739   24 9005 0393            STD   9005    OUT06
161 0393   69 9007 0699  OUT06     LDD   9007
162 0699   24 9006 0403            STD   9006    SETM1
163 0403   69 0456 0509  SETM1     LDD   MINS1
164 0509   24 9007 0565            STD   9007    PLSPQ
165 0565   60 9020 0673  PLSPQ     RAU   9020
166 0673   21 9054 0431            STU   9054    SETTS
167 0431   60 0534 0789  SETTS     RAU   TSTOK
168 0789   32 9020 0619            FAD   9020
169 0619   21 0534 0587            STU   TSTOK
170 0587   34 9050 0340            FDV   9050
171 0340   21 9055 0547            STU   9055
172 0547   60 0402 0657            RAU   QSUBF
173 0657   21 9056 0615            STU   9056
174 0615   32 9041 0645            FAD   9041
175 0645   21 0384 0637            STU   QSUBI
176 0637   60 0402 0707            RAU   QSUBF   QFTST
177 0707   46 0460 0461  QFTST     BMI   SHORT   SSUBM
178 0460   32 0613 0839  SHORT     FAD   TSHRT
179 0839   21 0613 0461            STU   TSHRT   SSUBM
180 0461   60 0613 0567  SSUBM     RAU   TSHRT
181 0567   34 9050 0420            FDV   9050
182 0420   21 9057 0427            STU   9057    APLS1
183 0427   50 0001 0683  APLS1     AXA   0001    CMNS1
184 0683   59 0001 0889  CMNS1     SXC   0001    TESTB
185 0889   42 0542 0322  TESTB     NZB   BMNS1   TSTLD
186 0542   53 0001 0434  BMNS1     SXB   0001    COSTS
187 0434   60 9041 0591  COSTS     RAU   9041
188 0591   39 9044 0344            FMP   9044
189 0344   32 9045 0723            FAD   9045
190 0723   21 0378 0481            STU   CCOST
191 0481   60 9054 0939            RAU   9054
192 0939   39 9044 0592            FMP   9044
193 0592   39 9046 0695            FMP   9046
194 0695   32 0378 0705            FAD   CCOST
195 0705   21 0378 0531            STU   CCOST
196 0531   60 9056 0989            RAU   9056
197 0989   46 0642 0493            BMI           TOTAL
198 0642   39 9047 0745            FMP   9047
199 0745   21 0450 0553            STU   TEMP4
200 0553   60 0378 0733            RAU   CCOST
201 0733   37 0450 0477            FAM   TEMP4
202 0477   21 0378 0493            STU   CCOST   TOTAL
203 0493   60 0378 0783  TOTAL     RAU   CCOST
204 0783   32 0336 0663            FAD   TCOST
205 0663   21 0336 0390            STU   TCOST
206 0390   34 0360 0510            FDV   TFREQ
207 0510   21 9059 0617            STU   9059
208 0617   60 0378 0833            RAU   CCOST
209 0833   34 9052 0386            FDV   9052
210 0386   21 9058 0543            STU   9058
211 0543   71 9052 0593            WR1   9052    PRINT
212 0593   74 9050 0643  PRINT     WR2   9050
213 0643   60 9050 0601            RAU   9050    CYCLE
```

```
214 0601   32 9033 0581      CYCLE  FAD   9033
215 0581   21 9050 0440             STU   9050     SHIFT
216 0440   27 9011 0795      SHIFT  SET   9011
217 0795   28 1100 0512             SIB   1100
218 0512   27 9021 0667             SET   9021
219 0667   28 1200 0562             SIB   1200
220 0562   27 9010 0717             SET   9010
221 0717   08 1000 0612             LIB   1000
222 0612   27 9020 0767             SET   9020
223 0767   08 1000 0662             LIB   1000
224 0662   27 9010 0817             SET   9010
225 0817   08 1100 0712             LIB   1100
226 0712   27 9020 0867             SET   9020
227 0867   08 1200 0762             LIB   1200     AMNS1
228 0762   51 0001 0357      AMNS1  SXA   0001     GENRN
229 0310   00 0001 0011      PRIME   00   0001      0011
230 0318   12 3456 7700      DGITS   12   3456      7700
231 0326   60 0000 0350      SKTN1   60   0000     LDTME
232 0305   60 0000 0400      SKTN2   60   0000     DEMND
233 0328   00 0000 0052      FTTWO   00   0000      0052
234 0456   10 0000 0051-     MINS1   10   0000      0051
```

APPENDIX A-3

OUTPUT STATISTICS

OUTPUT STATISTICS

CYCLE	PF	$\overline{PF}$	TS	$\overline{TS}$	QSUBF	SSUBM	TC	$\overline{TC}$
1+	1500000052+	1500000052+	1565000053+	1565000053+	1000000051+		4611496751+	4611496751+
2+	2000000052+	1750000052+	1255000053+	1410000053+	1000000051-	5000000050-	3516307551+	3985674351+
3+	1700000052+	1733333352+	1895000053+	1571666753+	6000000051+	3333333350-	4121961851+	4030229851+
4+	1200000052+	1600000052+	1885000053+	1650000053+	1000000051+	2500000050-	5837170851+	4369031351+
5+	1100000052+	1500000052+	1025000053+	1525000053+	3000000051-	8000000050-	6699840951+	4710883351+
6+	1100000052+	1433333352+	5050000052+	1355000053+	4000000051-	1333333351-	6752604551+	4972033751+
7+	1500000052+	1442857152+	5200000052+	1235714353+		1142857151-	4421306751+	4890242651+
8+	1400000052+	1437500052+	1255000053+	1238125053+	3000000051-	1375000051-	5309010751+	4941223051+
9+	1900000052+	1488888952+	1175000053+	1231111153+	2000000051+	1222222251-	3584618451+	4748868751+
10+	1700000052+	1510000052+	2010000053+	1309000053+	4000000051+	1100000051-	4140429451+	4680368951+
11+	2000000052+	1554545552+	1895000053+	1362272753+	3000000051+	1000000051-	3503667551+	4542743051+
12+	1900000052+	1583333352+	1805000053+	1399166753+	2000000051+	9166666750-	3675139551+	4455982651+
13+	1300000052+	1561538552+	1780000053+	1428461553+		8461538550-	5366107751+	4514266551+
14+	9000000051+	1514285752+	1160000053+	1409285753+	2000000051-	9285714350-	8007422251+	4662560851+
15+	1600000052+	1520000052+	6750000052+	1360333353+	1000000051+	8666666750-	4171421951+	4628095251+
16+	1800000052+	1537500052+	1640000053+	1377812553+	7000000051+	8125000050-	3854288951+	4571475251+
17+	1300000052+	1523529452+	2065000053+	1418235353+	2000000051-	8823529450-	5733650051+	4629808551+
18+	1900000052+	1544444452+	8450000052+	1386388953+	3000000051+	8333333350-	3537202651+	4555134251+
19+	9000000051+	1510526352+	1945000053+	1415789553+	2000000051-	8947368450-	8245538951+	4670861351+
20+	1000000052+	1485000052+	3900000052+	1364500053+	4000000051-	1050000051-	7396470051+	4762632751+
21+	1600000052+	1490476252+	6000000052+	1328095253+	2000000051+	1000000051-	4158625051+	4731756951+
22+	1700000052+	1500000052+	1605000053+	1340681853+	1000000051+	9545454550-	4075391251+	4697944251+
23+	1600000052+	1504347852+	1770000053+	1359347853+	1000000051+	9130434850-	4358256351+	4682236151+
24+	1400000052+	1500000052+	1595000053+	1369166753+		8750000050-	4946739351+	4692522551+
25+	1200000052+	1488000052+	1090000053+	1358000053+	2000000051+	8400000050-	5656308351+	4723612451+
26+	1600000052+	1492307752+	1180000053+	1351153853+	2000000051+	8076923150-	4257587551+	4704394851+
27+	9000000051+	1470370452+	1610000053+	1360740753+	5000000051-	9629629650-	8810588951+	4797482451+
28+	1500000052+	1471428652+	4900000052+	1329642953+	3000000051+	9285714350-	4415846751+	4783587951+
29+	2100000052+	1493103452+	1670000053+	1341379353+	1000000051+	8965517250-	3307576251+	4712003051+
30+	1000000052+	1476666752+	1765000053+	1355500053+	4000000051-	1000000051-	7771845051+	4781074051+
31+	1700000052+	1483871052+	5950000052+	1330967753+	3000000051+	9677419450-	3913197151+	4749000451+
32+	8000000051+	1462500052+	1528333353+	1337135453+	8000000051-	1187500051-	1063404452+	4818710451+
33+	1800000052+	1472727352+	2200000052+	1303282853+	2000000051+	1151515251-	3638922251+	4804759751+
34+	1100000052+	1461764752+	1740000053+	1316127453+	2000000051+	1117647151-	6331836451+	4838558151+
35+	1300000052+	1457142952+	1035000053+	1308095253+	1000000051+	1085714351-	5209657751+	4848017651+
36+	1900000052+	1469444452+	1220000053+	1305648153+	3000000051+	1055555651-	3591084251+	4802872651+
37+	1300000052+	1464864952+	1800000053+	1319009053+	3000000051+	1027027051-	5370307751+	4816482751+
38+	1500000052+	1465789552+	1505000053+	1323903553+	2000000051+	1000000051-	4600576751+	4810668451+
39+	1800000052+	1474359052+	1390000053+	1325598353+		9743589750-	3816372251+	4779542651+
40+	1300000052+	1470000052+	1267500053+	1324145853+	1000000051-	9750000050-	5412328851+	4793532851+
41+	2800000052+	1502439052+	1270000053+	1322825253+	5000000051+	9512195150-	2441682151+	4686630551+
42+	9000000051+	1488095252+	3530000053+	1375377053+	1000000051+	9285714350-	8281877851+	4738402151+
43+	1200000052+	1481395352+	5750000052+	1356763653+	1000000051-	9302325650-	5705812551+	4756626551+
44+	1100000052+	1472727352+	7650000052+	1343314453+	3000000051-	9772727350-	6635313651+	4788517951+
45+	2000000052+	1484444452+	8050000052+	1331351853+	6000000051+	9555555650-	3354882551+	4745594851+
46+	2100000052+	1497826152+	2495000053+	1356648553+	3000000051+	9347826150-	3414826251+	4705034451+
47+	2200000052+	1512766052+	2655000053+	1384273053+	4000000051+	9148936250-	3279461451+	4660923951+
48+	9000000051+	1500000052+	2590000053+	1409392453+	7000000051-	1041666751-	9552300051+	4722066151+
49+	1900000052+	1508163352+	5300000052+	1391445653+	3000000051+	1020408251-	3491942151+	4690439151+
50+	1400000052+	1506000052+	1755000053+	1398716753+	3000000051-	1060000051-	5406510751+	4703752651+
51+	1700000052+	1509803952+	1030000053+	1391486953+	3000000051+	1039215751-	3983052951+	4687841051+
52+	2200000052+	1523076952+	1885000053+	1400977653+	4000000051+	1019230851-	3183911451+	4646065351+
53+	1700000052+	1526415152+	2665000053+	1424827053+	3000000051+	1000000051-	4245614751+	4637650451+
54+	1500000052+	1525925952+	2000000053+	1435478453+	3000000051+	9814814850-	4690666751+	4638615551+
55+	1700000052+	1529090952+	1295000053+	1432924253+	1000000051-	9818181850-	4143255951+	4628602451+
56+	7000000051+	1514285752+	1401666753+	1432366153+	7000000051-	1089285751-	1181807952+	4682427851+
57+	1200000052+	1508771952+	2950000052+	1412412353+	2000000051+	1070175451-	5475445851+	4698937951+
58+	1400000052+	1506896652+	1000000053+	1405301753+	2000000051+	1051724151-	4830714351+	4701048751+
59+	1200000052+	1501694952+	1240000053+	1402500053+	1000000051-	1050847551-	5857100051+	4716706351+
60+	1900000052+	1508333352+	4650000052+	1386875053+	1000000051-	1050000051-	3587865851+	4693007051+
61+	1000000052+	1500000052+	1725000053+	1392418053+	2000000051-	1065573851-	7360925051+	4722164651+
62+	1500000052+	1500000052+	7000000052+	1381250053+	1000000051-	1064516151-	4587400051+	4719991051+
63+	1700000052+	1503174652+	1315000053+	1380198453+	6000000051+	1047619051-	4028820651+	4707583551+
64+	1400000052+	1501562552+	1980000053+	1389570353+	1000000051-	1046875051-	5164671451+	4714242551+
65+	2100000052+	1510769252+	1155000053+	1385961553+	8000000051+	1030769251-	3240626251+	4682729351+
66+	1900000052+	1516666752+	2665000053+	1405340953+	1000000051+	1015151551-	3798707951+	4665949851+
67+	1200000052+	1511940352+	2035000053+	1414738853+	3000000051-	1044776151-	6371295851+	4686151351+
68+	1200000052+	1507352952+	6725000052+	1403823553+	1000000051-	1044117651-	5727993851+	4698348551+
69+	1300000052+	1504347852+	8450000052+	1395724653+		1028985551-	5169757751+	4704252551+
70+	2100000052+	1512857152+	1075000053+	1391142953+	3000000051+	1014285751-	3230226251+	4675022651+
71+	1700000052+	1515493052+	2330000053+	1404366253+	1000000051+	1000000051-	4191817651+	4667388351+
72+	1400000052+	1513888952+	1645000053+	1407708353+		9861111150-	4956489351+	4671101651+
73+	1400000052+	1512328852+	1005000053+	1402191853+	1000000051+	9726027450-	4831689351+	4673138051+
74+	1900000052+	1517567652+	1490000053+	1403378453+	3000000051+	9594594650-	3629878951+	4655487251+
75+	1800000052+	1521333352+	2350000053+	1416000053+	7000000051+	9466666750-	3961972251+	4644546551+
76+	1700000052+	1523684252+	2180000053+	1426052653+	5000000051+	9342105350-	4167729451+	4637546651+
77+	1700000052+	1525974052+	1485000053+	1426818253+		9220779250-	4056120651+	4629134651+
78+	1900000052+	1530769252+	1535000053+	1428205153+	1000000051+	9102564150-	3636344751+	4613336451+
79+	1300000052+	1527848152+	1745000053+	1432215253+	2000000051+	8987341850-	5358757751+	4621365051+
80+	1800000052+	1531250052+	1465000053+	1432625053+	1000000051+	8875000050-	3827747251+	4609703851+
81+	1500000052+	1530864252+	1735000053+	1436358053+	2000000051+	8765432150-	4642436751+	4610099851+
82+	1800000052+	1534146352+	1610000053+	1438475653+	4000000051+	8658536650-	3849738951+	4599220251+
83+	1200000052+	1530120552+	1536666753+	1439658753+	5000000051-	9156626550-	6591258351+	4618042651+
84+	1700000052+	1532142952+	1005000053+	1434484253+	6000000051+	9047619050-	3979038251+	4609602051+
85+	1800000052+	1535294152+	1880000053+	1439725553+	4000000051+	8941176550-	3890688951+	4599686051+
86+	1300000052+	1532558152+	1720000053+	1442984553+	1000000051-	8953488450-	5507353851+	4608638751+
87+	1400000052+	1531034552+	1310000053+	1441456053+	3000000051+	8850574750-	4891164351+	4611608251+
88+	1300000052+	1528409152+	1365000053+	1440587253+	2000000051+	8750000050-	5278957751+	4618058451+
89+	1500000052+	1528089952+	1026250053+	1435931753+	1000000051-	8764044950-	4646777551+	4618375251+
90+	1600000052+	1528888952+	1145000053+	1432699153+		8666666750-	4251615651+	4614110651+
91+	1200000052+	1525274752+	1460000053+	1432999153+	2000000051+	8571428650-	5740483351+	4623848751+
92+	1700000052+	1527173952+	92750000052+	1427504653+	3000000051-	8804347850-	4319533851+	4620166651+
93+	1400000052+	1525806552+	1500000053+	1428284153+	7000000051+	8709677450-	4928214351+	4623205851+
94+	1500000052+	1525531952+	1595000053+	1430057753+	2000000051+	8617021350-	4616956751+	4623140551+
95+	1700000052+	1527368452+	1380000053+	1429530753+	4000000051+	8526315850-	4039258851+	4616299751+
96+	1900000052+	1531250052+	1765000053+	1433025253+	1000000051+	8437500050-	3669392151+	4604060851+
97+	1900000052+	1535051552+	2015000053+	1439024953+	2000000051+	8350515550-	3705313251+	4592592651+
98+	1700000052+	1536734752+	1850000053+	1443218653+	4000000051+	8265306150-	4114735351+	4587198551+
99+	1900000052+	1540404052+	1985000053+	1448691153+	5000000051+	8181818250-	3701002651+	4576157451+
100+	1100000052+	1536000052+	2162500053+	1455829253+	1000000051-	8200000050-	6618511451+	4590783651+
101+	2100000052+	1541584252+	1105000053+	1452355653+	4000000051+	8118811950-	3234126251+	4572485751+
102+	1600000052+	1542156952+	2690000053+	1464489453+		8039215750-	4515231351+	4571903451+

103+	3100000052+	1557281652+	1545000053+	1465271153+	5000000051+	7961165050-	2229608151+	4526634651+
104+	1800000052+	1559815452+	3460000053+	1484451253+	3000000051+	7884615450-	4130322251+	4522236651+
105+	1900000052+	1562857152+	2215000053+	1491408853+	2000000051+	7809523850-	3734050051+	4513110751+
106+	2000000052+	1566981152+	2160000053+	1497716253+	2000000051+	7735849150-	3539840051+	4501391651+
107+	6300000051+	1557943952+	1716666753+	1499762553+	1100000052-	8691588850-	1526641752+	4531974951+
108+	1000000052+	1552777852+	9166666751+	1486724653+	5000000051-	9074074150-	7515025051+	4557870251+
109+	1400000052+	1551376152+	9325000052+	1476135453+	1000000051-	9082568850-	4843408951+	4560234251+
110+	1300000052+	1549090952+	1260000053+	1474175553+	5000000051+	9000000050-	5256907751+	4565549251+
111+	1600000052+	1549549552+	1115000053+	1470934853+	2000000051-	9099099150-	4496496951+	4564906951+
112+	1600000052+	1550000052+	1240000053+	1468872953+		9017857150-	4267825051+	4562168851+
113+	1500000052+	1549557552+	1285000053+	1467245753+	5000000051+	8938053150-	4560536751+	4562154851+
114+	1200000052+	1546491252+	1761250053+	1469824653+	3000000051-	9122807050-	6309017851+	4574045051+
115+	1600000052+	1546956552+	7216666752+	1463319053+	1000000051-	9130434850-	4304384451+	4571619751+
116+	2100000052+	1551724152+	1550000053+	1464066253+	7000000051+	9051724150-	3291976251+	4556690651+
117+	1500000052+	1551282152+	2945000053+	1476723853+	2000000051+	8974359050-	4862656751+	4559219251+
118+	1700000052+	1552542452+	1410000053+	1476158353+	4000000051+	8898305150-	4044076551+	4554439051+
119+	1300000052+	1550420252+	1696666753+	1478011353+	1000000051-	8907563050-	5502453851+	4561118851+
120+	1900000052+	1553333352+	1375000053+	1477152953+	4000000051+	8833333350-	3613355351+	4551458151+
121+	2500000052+	1561157052+	2260000053+	1483622753+	8000000051+	8760330650-	2842792051+	4528844751+
122+	2300000052+	1567213152+	3640000053+	1501298053+	2000000051+	8688524650-	3253791351+	4513506751+
123+	1600000052+	1567479752+	2935000053+	1512954153+	3000000051+	8617886250-	4557034451+	4513868051+
124+	1500000052+	1566935552+	1640000053+	1513978653+	3000000051+	8548387150-	4625146751+	4514727151+
125+	2200000052+	1572000052+	1670000053+	1515226853+	3000000051+	8480000050-	3157231851+	4499528751+
126+	2700000052+	1580952452+	2890000053+	1526137753+	7000000051+	8412698450-	2695914851+	4475082151+
127+	2700000052+	1589763852+	4200000053+	1547191753+	7000000051+	8346456750-	2828370451+	4453060751+
128+	1400000052+	1588281352+	3431666753+	1561914253+	4000000051-	8593750050-	5876317951+	4462861851+
129+	1500000052+	1587596952+	8700000052+	1556550553+	4000000051+	8527131850-	4485006751+	4463024051+
130+	1700000052+	1588461552+	2020000053+	1560115553+	4000000051+	8461538550-	4142035351+	4460381551+
131+	1700000052+	1589313052+	1505000053+	1559694853+	3000000051+	8396946650-	4059332451+	4457106851+
132+	1600000052+	1589393952+	1590000053+	1559924453+	1000000051+	8333333350-	4327543851+	4456118751+
133+	1700000052+	1590225652+	1440000053+	1559022753+	1000000051+	8270676750-	4048894151+	4452845551+
134+	2400000052+	1596268752+	1865000053+	1561306153+	4000000051+	8208955250-	2916310451+	4435605351+
135+	1700000052+	1597037052+	2800000053+	1570481653+		8148148150-	4267294151+	4434278251+
136+	1500000052+	1596323552+	1456250053+	1569641753+	3000000051-	8308823550-	4991704251+	4438129651+
137+	1400000052+	1594890552+	1145000053+	1566542153+	2000000051-	8394160650-	5144703651+	4442656951+
138+	1900000052+	1597101452+	9350000052+	1561965753+	1000000051+	8333333350-	3550134251+	4434962751+
139+	2000000052+	1600000052+	1650000053+	1562599153+	5000000051+	8273381350-	3470225051+	4426287151+
140+	1400000052+	1598571452+	2995000053+	1572830553+	2000000051+	8214285750-	5219739351+	4431250651+
141+	1600000052+	1598581652+	1440000053+	1571888453+	4000000051+	8156028450-	4301950051+	4430332751+
142+	1500000052+	1597887352+	1516666753+	1571499653+	1000000051-	8169014150-	4736033351+	4432353951+
143+	2000000052+	1600699352+	1310000053+	1569670953+	5000000051+	8111888150-	3423815051+	4423541751+
144+	1200000052+	1597916752+	2035000053+	1572902453+	1000000051-	8125000050-	6037962551+	4431961351+
145+	1400000052+	1596551752+	9900000052+	1568882353+	1000000051+	8068965550-	4828764351+	4434361151+
146+	1200000052+	1593835652+	9650000052+	1564746253+	1000000051-	8082191850-	5794537551+	4441375251+
147+	2100000052+	1597278952+	1100000053+	1561584653+	3000000051+	8027210950-	3233476251+	4430572051+
148+	1100000052+	1593918952+	2425000053+	1567418553+	3000000051-	8175675750-	7047295551+	4442773651+
149+	1000000052+	1589932952+	6650000052+	1561362053+	3000000051-	8322147750-	7271545051+	4454714251+
150+	2000000052+	1592666752+	8250000052+	1556452953+	4000000051+	8266666750-	3357612551+	4445529551+
151+	1700000052+	1593377552+	2400000053+	1562039353+	6000000051+	8211920550-	4203058851+	4443816351+
152+	1500000052+	1592763252+	2120000053+	1565710153+	1000000051-	8223684250-	4845840051+	4446307351+
153+	1700000052+	1593464152+	1395000053+	1564594453+		8169934650-	4041667651+	4443485651+
154+	1500000052+	1592857152+	1465000053+	1563947753+	3000000051+	8116883150-	4593296751+	4444401551+
155+	1300000052+	1590967752+	1680000053+	1564696453+	1000000051+	8064516150-	5345107751+	4449149651+
156+	1800000052+	1592307752+	1235000053+	1562582953+	6000000051+	8012820550-	3792863951+	4444394151+
157+	1900000052+	1594267552+	1930000053+	1564923253+	4000000051+	7961783450-	3693100051+	4438691251+
158+	1600000052+	1594303852+	2485000053+	1570746553+	3000000051+	7911392450-	4480253151+	4438955151+
159+	1500000052+	1593710752+	1715000053+	1571653753+	4000000051+	7861635250-	4638796751+	4440138151+
160+	2100000052+	1596875052+	1770000053+	1572893453+	2000000051+	7812500050-	3320576251+	4430936251+
161+	2200000052+	1600621152+	2185000053+	1576695353+	7000000051+	7763975250-	3221138651+	4420608151+
162+	1500000052+	1600000052+	3085000053+	1585005853+		7716049450-	4888136751+	4423313751+
163+	2300000052+	1602454052+	1485000053+	1585386153+	1000000051+	7668711750-	3447702551+	4415843451+
164+	1500000052+	1601829352+	2160000053+	1588889953+	3000000051+	7621951250-	4719786751+	4417579051+
165+	2200000052+	1605454552+	1570000053+	1588775453+	5000000051+	7575757650-	3144822751+	4407008751+
166+	1100000052+	1602409652+	2615000053+	1594957553+	1000000051-	7590361450-	6730813651+	4416618451+
167+	1200000052+	1600000052+	7416666752+	1589848053+	2000000051-	7664670750-	5910395851+	4423327151+
168+	1500000052+	1599404852+	8950000052+	1585712053+	1000000051+	7619047650-	4489556751+	4423696751+
169+	9000000051+	1595266352+	1325000053+	1584169353+	3000000051-	7751479350-	8279694451+	4436569051+
170+	2100000052+	1598235352+	6600000052+	1578733053+	3000000051+	7705882450-	3176276251+	4426828151+
171+	2300000052+	1602339252+	2415000053+	1583623553+	6000000051+	7660818750-	3108389151+	4415760951+
172+	2000000052+	1604651252+	3065000053+	1592236153+	3000000051+	7616279150-	3663725[illegible]1+	4410308751+
173+	1300000052+	1602890252+	2140000053+	1595402453+	3000000051+	7572254350-	5441707751+	4415143951+
174+	1300000052+	1601149452+	1245000053+	1593388653+	1000000051-	7586206950-	5407603851+	4419774951+
175+	2300000052+	1605142952+	1240000053+	1591369253+	7000000051+	7542857150-	2968921751+	4407895351+
176+	1300000052+	1603409152+	2650000053+	1597384153+	3000000051-	7670454550-	6010346251+	4415277551+
177+	1600000052+	1603389852+	1030000053+	1594178653+	3000000051+	7627118650-	4231993851+	4414244251+
178+	1700000052+	1603932652+	1565000053+	1594014753+	4000000051+	7584269750-	4068967651+	4412188151+
179+	1700000052+	1604469352+	1735000053+	1594802353+	1000000051+	7541899450-	4096267651+	4410318251+
180+	2100000052+	1607222252+	1675000053+	1595247853+	4000000051+	7500000050-	3308226251+	4402318451+
181+	1500000052+	1606629852+	2690000053+	1601296253+	4000000051+	7458563550-	4816246751+	4404453651+
182+	1800000052+	1607692352+	1725000053+	1601975953+	3000000051+	7417582450-	3867180651+	4401148351+
183+	1300000052+	1606010952+	1995000053+	1604123653+	2000000051+	7377049250-	5411257751+	4405616251+
184+	1600000052+	1605978352+	1435000053+	1603204453+	3000000051+	7336956550-	4301096951+	4405050451+
185+	1800000052+	1607027052+	1400000053+	1602106053+	3000000051+	7297297350-	3817888951+	4401495551+
186+	1700000052+	1607526952+	1815000053+	1603250653+		7258064550-	4109114751+	4399833151+
187+	9000000051+	1603743352+	1290000053+	1601575553+	4000000051-	7433155150-	8491300051+	4412111751+
188+	2100000052+	1606383052+	6700000052+	1596620353+	6000000051+	7393617050-	3177576251+	4403527251+
189+	1000000052+	1603174652+	2247500053+	1600064153+	5000000051+	7619047650-	8103567551+	4415738651+
190+	1300000052+	1601578952+	5650000052+	1594616453+	2000000051+	7578947450-	5110957751+	4418708551+
191+	1800000052+	1602617852+	9750000052+	1591372353+	1000000051+	7539267050-	3753430651+	4414796551+
192+	1800000052+	1603645852+	1955000053+	1593266253+	2000000051+	7500000050-	3902063951+	4411799051+
193+	2200000052+	1606735852+	2195000053+	1596384053+	5000000051+	7461139950-	3222379551+	4403360551+
194+	1100000052+	1604123752+	2520000053+	1601144953+	2000000051-	7525773250-	6889054551+	4412146951+
195+	1100000052+	1601538552+	6475000052+	1596254453+	1000000051-	7538461550-	6242515951+	4418594051+
196+	1600000052+	1601530652+	8600000052+	1592498053+	3000000051+	7500000050-	4202987551+	4417495151+
197+	1400000052+	1600507652+	1630000053+	1592688453+	1000000051+	7461928950-	4953564351+	4419875451+
198+	1600000052+	1600505152+	1305000053+	1591235453+	2000000051+	7424242450-	4278915651+	4419163851+
199+	2000000052+	1602512652+	1575000053+	1591153853+	1000000051+	7386934750-	3459987551+	4413148351+
200+	1800000052+	1603500052+	1955000053+	1592973153+	4000000051+	7350000050-	3902063951+	4410279751+
201+	2100000052+	1605970152+	2070000053+	1595346353+	4000000051+	7313432850-	3359576251+	4403444251+
202+	1400000052+	1604950552+	2450000053+	1599577353+	4000000051+	7277227750-	5113464351+	4406510351+
203+	2600000052+	1609852252+	1530000053+	1599234553+	4000000051+	7241379350-	2656803851+	4392590051+
204+	1500000052+	1609313752+	3390000053+	1608012853+		7205882450-	4943646751+	4395107851+
205+	2100000052+	1611707352+	1330000053+	1606656653+	6000000051+	7170731750-	3263376251+	4387914651+
206+	1400000052+	1610679652+	2535000053+	1611183253+	5000000051+	7135922350-	5130039351+	4391046151+
207+	1900000052+	1612077352+	1700000053+	1611592353+	1000000051+	7101449350-	3660052651+	4386884051+
208+	2600000052+	1616826952+	1710000053+	1612065453+	5000000051+	7067307750-	2675703851+	4373654551+
209+	1400000052+	1615789552+	3332500053+	1620297253+	1000000051-	7081339750-	5428408951+	4378027251+
210+	1800000052+	1616666752+	1205000053+	1618319653+	2000000051+	7047619050-	3788313951+	4374900751+

211+	2300000052+	1619905252+	2215000053+	1621147453+	7000000051+	7014218050-	3084650051+	4366218551+
212+	1500000052+	1619339652+	3275000053+	1628948653+	6000000051+	6981132150-	4922716751+	4368650251+
213+	1400000052+	1618309952+	1570000053+	1628671953+	3000000051-	7089201950-	5370435751+	4372718951+
214+	1000000052+	1615420652+	1011666753+	1625788753+	2000000051-	7149532750-	7166185051+	4380799551+
215+	1400000052+	1614418652+	7275000052+	1621610653+	1000000051-	7162790750-	4920433951+	4382976151+
216+	1600000052+	1614351952+	1145000053+	1619404153+	4000000051+	7129629650-	4251615651+	4382373451+
217+	1100000052+	1611981652+	1970000053+	1621019753+		7096774250-	6388918251+	4388683251+
218+	1900000052+	1613302852+	5675000052+	1616187153+	1000000051-	7110091750-	3602593451+	4384436551+
219+	9000000051+	1610045752+	1442500053+	1615394053+	5000000051-	7305936150-	8759780651+	4395604451+
220+	1600000052+	1610000052+	4350000052+	1610028553+	1000000051-	7318181850-	4255471951+	4394971551+
221+	1600000052+	1609954852+	1635000053+	1610141553+	6000000051+	7285067950-	4335221951+	4394702951+
222+	1400000052+	1609009052+	1510000053+	1609690553+	3000000051-	7387387450-	5358735751+	4398481251+
223+	1300000052+	1607623352+	7816666752+	1605977453+	2000000051-	7443946250-	5464150051+	4402345651+
224+	1500000052+	1607142952+	1026250053+	1603389353+	1000000051-	7455357150-	4646777551+	4403364251+
225+	1500000052+	1606666752+	1485000053+	1602863153+		7422222250-	4596936751+	4404167451+
226+	1700000052+	1607079652+	1280000053+	1601434553+	4000000051+	7389380550-	4023200051+	4402384151+
227+	1700000052+	1607489052+	2150000053+	1603851153+	4000000051+	7356828250-	4162911851+	4401268651+
228+	1500000052+	1607017552+	2015000053+	1605654453+	3000000051+	7324561450-	4693396751+	4402464551+
229+	1700000052+	1607423652+	1155000053+	1603686553+	6000000051+	7292576450-	4003126551+	4400620251+
230+	2300000052+	1610434852+	2110000053+	1605887853+	2000000051+	7260869650-	3072187051+	4392371251+
231+	1500000052+	1609956752+	2325000053+	1609000953+	1000000051+	7229437250-	4749816751+	4393812951+
232+	2100000052+	1612069052+	1640000053+	1609134553+	3000000051+	7198275950-	3303676251+	4387691751+
233+	1300000052+	1610729652+	2222500053+	1611767053+	1000000051-	7210300450-	5612878851+	4391935551+
234+	1400000052+	1609829152+	6550000052+	1607678253+	2000000051-	7264957350-	5049153651+	4394378051+
235+	1400000052+	1608936252+	1206666753+	1605971853+	2000000051-	7319148950-	5156728651+	4397200751+
236+	1900000052+	1610169552+	1080000053+	1603743153+	2000000051+	7288135650-	3570968451+	4393069551+
237+	2000000052+	1611814352+	2075000053+	1605731553+	7000000051+	7257384050-	3528237551+	4388541651+
238+	1500000052+	1611344552+	2282500053+	1608575153+	1000000051-	7268907650-	4875415051+	4390445951+
239+	2200000052+	1613807552+	1495000053+	1608099953+	4000000051+	7238493750-	3135515951+	4383287851+
240+	1300000052+	1612500052+	2480000053+	1611732853+	2000000051+	7208333350-	5513107751+	4387082951+
241+	1500000052+	1612033252+	1257500053+	1610262953+	1000000051-	7219917050-	4688865051+	4388248151+
242+	1400000052+	1611157052+	1045000053+	1607927153+	1000000051-	7231405050-	4982346451+	4390381451+
243+	1900000052+	1612345752+	1095000053+	1605816353+		7201646150-	3573123751+	4386418151+
244+	1900000052+	1613524652+	1470000053+	1605259753+	2000000051-	7254098450-	3837531651+	4383769151+
245+	1500000052+	1613061252+	1780000053+	1605972953+	2000000051+	7224489850-	4650626751+	4384781951+
246+	1900000052+	1614227652+	1385000053+	1605074753+	3000000051+	7195122050-	3614792151+	4381097751+
247+	1400000052+	1613360352+	1855000053+	1606086553+	2000000051-	7246963650-	5283153651+	4384266851+
248+	2400000052+	1616532352+	1175000053+	1604348353+	5000000051+	7217741950-	2837822951+	4375009051+
249+	1700000052+	1616867552+	3415000053+	1611620053+	4000000051+	7188755050-	4366055951+	4374971251+
250+	1100000052+	1614800052+	1615000053+	1611633553+	4000000051-	7320000050-	7028086451+	4382200451+

.
.
.
.

(CYCLES 251 THROUGH 5750 OMITTED)

.
.
.
.
.

5751+	2100000052+	1599704452+	2085000053+	1600534253+	2000000051+	6597113550-	3361526251+	4412618351+
5752+	1500000052+	1599687152+	2265000053+	1600649753+	1000000051+	6595966650-	4738896751+	4412671451+
5753+	1300000052+	1599635052+	1320000053+	1600600953+	3000000051+	6594820150-	5269507751+	4412792451+
5754+	2400000052+	1599774152+	1195000053+	1600530453+	6000000051+	6593674050-	2840097951+	4412382451+
5755+	1900000052+	1599826252+	2880000053+	1600752853+		6592528250-	3829600051+	4412262151+
5756+	2400000052+	1599965352+	2170000053+	1600851753+	8000000051+	6591382950-	2951004251+	4411881251+
5757+	1400000052+	1599930552+	3180000053+	1601126053+		6590238050-	5255814351+	4412009551+
5758+	1200000052+	1599861152+	1240000053+	1601063253+	4000000051+	6589093450-	5690433351+	4412176151+
5759+	9000000051+	1599739552+	1066666753+	1600970453+	4000000051-	6594894950-	8423555651+	4412567951+
5760+	1500000052+	1599722252+	4600000052+	1600772453+		6593750050-	4410386751+	4412567651+
5761+	1300000052+	1599670252+	1390000053+	1600735853+	2000000051+	6592605550-	5284207751+	4412690551+
5762+	2700000052+	1599861252+	1050000053+	1600640253+	2000000051+	6591461350-	2509870451+	4412133251+
5763+	2900000052+	1600086852+	3290000053+	1600933353+	2000000051+	6590317550-	2547644851+	4411546951+
5764+	1400000052+	1600052052+	3350000053+	1601236853+		6589174250-	5288964351+	4411680151+
5765+	2100000052+	1600138852+	1270000053+	1601179353+	2000000051+	6588031250-	3255576251+	4411416951+
5766+	1500000052+	1600121452+	2165000053+	1601277153+	5000000051+	6586888750-	4720696751+	4411467251+
5767+	1800000052+	1600156152+	1825000053+	1601315953+	4000000051+	6585746550-	3882347251+	4411364051+
5768+	1900000052+	1600208052+	1815000053+	1601352953+	3000000051+	6584604750-	3676576351+	4411212751+
5769+	1800000052+	1600242752+	2140000053+	1601446353+	3000000051+	6583463350-	3930122251+	4411118951+
5770+	1600000052+	1600242652+	1955000053+	1601507653+	2000000051+	6582322450-	4389821951+	4411115251+
5771+	2500000052+	1600398552+	1715000053+	1601527353+	7000000051+	6581181850-	2783278051+	4410674551+
5772+	1500000052+	1600381252+	3230000053+	1601809453+	3000000051+	6580041650-	4914526751+	4410756451+
5773+	1700000052+	1600398452+	1365000053+	1601768453+	1000000051-	6580634050-	4154497151+	4410709351+
5774+	2000000052+	1600467652+	1845000053+	1601810553+	4000000051+	6579494350-	3496842551+	4410511551+
5775+	1900000052+	1600519552+	2330000053+	1601936653+	8000000051+	6578355050-	3750573751+	4410375951+
5776+	1100000052+	1600432852+	2045000053+	1602013353+	4000000051-	6584141350-	7134804551+	4410700051+
5777+	1900000052+	1600484752+	9150000052+	1601894453+	3000000051+	6583001650-	3547260551+	4410522651+
5778+	1600000052+	1600484652+	2720000053+	1602087953+	3000000051+	6581862250-	4520350051+	4410541751+
5779+	1700000052+	1600501852+	1345000053+	1602043453+		6580723350-	4033638251+	4410472451+
5780+	1700000052+	1600519052+	1855000053+	1602087253+	3000000051+	6579584850-	4115538251+	4410418151+
5781+	1600000052+	1600518952+	1960000053+	1602149153+	5000000051+	6578446650-	4390675051+	4410414751+
5782+	1000000052+	1600415152+	1500000053+	1602131453+	1000000051+	6577308950-	6899500051+	4410683751+
5783+	1400000052+	1600380452+	7850000052+	1601990153+		6576171550-	4788789351+	4410740951+
5784+	1600000052+	1600380452+	1047500053+	1601894253+	1000000051-	6576763550-	4359979751+	4410732151+

```
5785+  1500000052+ 1600363052+ 1441250053+ 1601866553+ 3000000051- 6580812450- 4988974251+ 4410825851+
5786+  1600000052+ 1600362952+ 9500000052+ 1601753853+ 5000000051+ 6579675150- 4218343851+ 4410792551+
5787+  1700000052+ 1600380252+ 2165000053+ 1601851153+ 2000000051+ 6578538150- 4165320651+ 4410747451+
5788+  2400000052+ 1600518352+ 1865000053+ 1601896653+ 5000000051+ 6577401550- 2916310451+ 4410360251+
5789+  1600000052+ 1600518252+ 3095000053+ 1602154553+ 4000000051+ 6576265350- 4584334451+ 4410390351+
5790+  1100000052+ 1600431852+ 1555000053+ 1602146453+ 1000000051+ 6575129550- 6285922751+ 4410613051+
5791+  2200000052+ 1600535352+ 8750000052+ 1602020853+ 6000000051+ 6573994150- 3058579551+ 4410292151+
5792+  1200000052+ 1600466252+ 2650000053+ 1602201853+ 2000000051- 6576312250- 6344541751+ 4410542451+
5793+  1500000052+ 1600448852+ 8800000052+ 1602077153+              6575176950- 4486826751+ 4410554751+
5794+  1500000052+ 1600431552+ 1295000053+ 1602024153+ 1000000051+ 6574042150- 4562356751+ 4410579351+
5795+  1500000052+ 1600414252+ 1555000053+ 1602016053+ 6000000051+ 6572907750- 4609676751+ 4410611651+
5796+  1400000052+ 1600379652+ 1665000053+ 1602026853+ 1000000051+ 6571773650- 4960389351+ 4410694651+
5797+  2400000052+ 1600517552+ 1235000053+ 1601963553+ 2000000051+ 6570640050- 2844647951+ 4410289551+
5798+  1400000052+ 1600482952+ 2385000053+ 1602098653+ 1000000051+ 6569506750- 5100789351+ 4410393751+
5799+  1700000052+ 1600500152+ 1340000053+ 1602053453+ 3000000051+ 6568373950- 4032835351+ 4410324551+
5800+  9000000051+ 1600379352+ 1621250053+ 1602056753+ 7000000051- 6579310350- 9258445951+ 4410747151+
5801+  2900000052+ 1600603352+ 3500000052+ 1601840953+ 1000000051+ 6578176250- 2270879351+ 4410126351+
5802+  1500000052+ 1600586052+ 2965000053+ 1602075853+ 2000000051+ 6577042450- 4866296751+ 4410200051+
5803+  1600000052+ 1600585952+ 1745000053+ 1602100453+ 3000000051+ 6575909050- 4353990651+ 4410190251+
5804+  2100000052+ 1600672052+ 1735000053+ 1602123353+ 2000000051+ 6574776050- 3316026251+ 4409943051+
5805+  2000000052+ 1600740752+ 2315000053+ 1602246153+ 5000000051+ 6573643450- 3560997551+ 4409760251+
5806+  1200000052+ 1600671752+ 2352500053+ 1602375453+ 1000000051- 6574233650- 6110193851+ 4409979851+
5807+  1300000052+ 1600619952+ 8750000052+ 1602250153+ 4000000051+ 6573101450- 5176057751+ 4410086951+
5808+  1200000052+ 1600551052+ 1230000053+ 1602186053+              6571969750- 5688158351+ 4410251951+
5809+  9000000051+ 1600430452+ 7500000052+ 1602039353+ 5000000051- 6579445750- 8549722251+ 4410652751+
5810+  8000000051+ 1600292652+ 3616666752+ 1601825853+ 4000000051- 6585197950- 9235918851+ 4411067951+
5811+  1900000052+ 1600344252+ 7250000052+ 1601674953+ 5000000051+ 6584064750- 3519960551+ 4410885851+
5812+  1500000052+ 1600326952+ 2619000053+ 1601850053+ 2000000051- 6586373050- 5069991351+ 4410992151+
5813+  2600000052+ 1600498952+ 1295000053+ 1601797253+ 7000000051+ 6585240050- 2632128851+ 4410495151+
5814+  9000000051+ 1600378452+ 3465000053+ 1602117753+ 6000000051- 6594427250- 9595494451+ 4410996651+
5815+  2300000052+ 1600498752+ 5500000052+ 1601936753+ 6000000051+ 6593293250- 2887021751+ 4410620051+
5816+  1300000052+ 1600447052+ 2690000053+ 1602123853+ 2000000051- 6595598350- 5864900051+ 4410823051+
5817+  1200000052+ 1600378252+ 8450000052+ 1601993753+ 1000000051+ 6594464550- 5600570851+ 4410976451+
5818+  1700000052+ 1600395352+ 1125000053+ 1601911753+ 2000000051+ 6593331050- 3998308851+ 4410901151+
5819+  1100000052+ 1600309352+ 1330000053+ 1601864953+ 2000000051- 6595635050- 6593718251+ 4411158951+
5820+  1800000052+ 1600343652+ 8900000052+ 1601742653+ 2000000051+ 6594501750- 3740538951+ 4411029351+
5821+  1900000052+ 1600395152+ 1820000053+ 1601780153+ 2000000051+ 6593368850- 3677294751+ 4410879751+
5822+  1700000052+ 1600412252+ 2075000053+ 1601861453+ 3000000051+ 6592236350- 4150867651+ 4410832251+
5823+  1600000052+ 1600412252+ 2040000053+ 1601936653+ 1000000051+ 6591104250- 4404325051+ 4410831151+
5824+  1400000052+ 1600377752+ 1330000053+ 1601890053+ 1000000051+ 6589972550- 4895064351+ 4410903851+
5825+  1400000052+ 1600343352+ 1282500053+ 1601835153+ 1000000051- 6590557950- 5028658951+ 4410996651+
5826+  1700000052+ 1600360552+ 1260000053+ 1601776553+ 1000000051+ 6589426750- 4019988251+ 4410925351+
5827+  1800000052+ 1600394752+ 1455000053+ 1601751353+              6588295950- 3826230651+ 4410812451+
5828+  1700000052+ 1600411852+ 1707500053+ 1601769453+ 1000000051- 6588881350- 4209498551+ 4410775751+
5829+  1100000052+ 1600326052+ 1315000053+ 1601720253+ 3000000051- 6592897650- 6771813651+ 4411054151+
5830+  1700000052+ 1600343152+ 6600000052+ 1601558753+ 1000000051+ 6591766750- 3923635351+ 4410965351+
5831+  2100000052+ 1600428752+ 1735000053+ 1601581653+ 4000000051+ 6590636350- 3316026251+ 4410718951+
5832+  1300000052+ 1600377252+ 2450000053+ 1601727053+ 1000000051+ 6591220950- 5660653851+ 4410893051+
5833+  1600000052+ 1600377252+ 1260000053+ 1601668553+ 1000000051+ 6590090950- 4271237551+ 4410869151+
5834+  2100000052+ 1600462852+ 1295000053+ 1601615953+ 2000000051+ 6588961350- 3258826251+ 4410610051+
5835+  1400000052+ 1600428452+ 2510000053+ 1601771653+ 1000000051- 6589545850- 5268021451+ 4410738651+
5836+  1200000052+ 1600359852+ 1005000053+ 1601669353+              6588416750- 5636970851+ 4410896151+
5837+  1100000052+ 1600274152+ 9400000052+ 1601556053+ 2000000051- 6590714450- 6496927351+ 4411141851+
5838+  1500000052+ 1600256952+ 8450000052+ 1601426453+ 1000000051+ 6589585550- 4480456751+ 4411152951+
5839+  1500000052+ 1600239852+ 1520000053+ 1601412453+ 1000000051+ 6588456950- 4603306751+ 4411138851+
5840+  2100000052+ 1600325352+ 1630000053+ 1601417353+ 7000000051+ 6587328850- 3302376251+ 4410934651+
5841+  2000000052+ 1600393852+ 2700000053+ 1601605453+ 3000000051+ 6586201050- 3613550051+ 4410764051+
5842+  1700000052+ 1600410852+ 2215000053+ 1601710453+ 2000000051+ 6585073650- 4173350051+ 4410720951+
5843+  1300000052+ 1600359452+ 1775000053+ 1601740053+ 1000000051+ 6583946650- 5365057751+ 4410853651+
5844+  1100000052+ 1600273852+ 9550000052+ 1601629453+ 2000000051- 6586242350- 6500650051+ 4411099451+
5845+  2300000052+ 1600393552+ 9400000052+ 1601516253+ 4000000051+ 6585115550- 2933313051+ 4410736151+
5846+  1500000052+ 1600376352+ 2546250053+ 1601677853+ 1000000051+ 6585699650- 4923417551+ 4410818351+
5847+  1000000052+ 1600273652+ 9850000052+ 1601572353+ 5000000051- 6593124750- 7758905051+ 4411176151+
5848+  1100000052+ 1600188152+ 4725000052+ 1601379353+ 3000000051- 6597127250- 6562720551+ 4411429151+
5849+  1000000052+ 1600085552+ 7900000052+ 1601240553+ 4000000051- 6602838150- 7505670051+ 4411759751+
5850+  9000000051+ 1599965852+ 3275000052+ 1601022853+ 1000000051- 6603418850- 7532675051+ 4412059851+
5851+  1600000052+ 1599965852+ 7350000052+ 1600874853+              6602290250- 4181659451+ 4412020451+
5852+  2300000052+ 1600085452+ 1805000053+ 1600909753+ 3000000051+ 6601162050- 3035984851+ 4411682551+
5853+  1600000052+ 1600085452+ 2485000053+ 1601060753+ 2000000051+ 6600034250- 4480253151+ 4411694151+
5854+  1600000052+ 1600085452+ 1327500053+ 1601014053+ 1000000051- 6600615050- 4407754751+ 4411693451+
5855+  1900000052+ 1600136652+ 1435000053+ 1600985653+ 2000000051+ 6599487650- 3621976351+ 4411533351+
5856+  1000000052+ 1600034252+ 1780000053+ 1601016253+              6598360750- 6975940051+ 4411807051+
5857+  1600000052+ 1600034152+ 9050000052+ 1600897453+ 3000000051+ 6597234150- 4210665651+ 4411772651+
5858+  1700000052+ 1600051252+ 1880000053+ 1600945053+ 1000000051+ 6596107950- 4119552951+ 4411719651+
5859+  1500000052+ 1600034152+ 1160000053+ 1600869853+ 3000000051+ 6594982150- 4537786751+ 4411739851+
5860+  1500000052+ 1600017152+ 1780000053+ 1600900353+ 1000000051+ 6593856750- 4650626751+ 4411778051+
5861+  1100000052+ 1599931852+ 1235000053+ 1600837953+ 5000000051- 6601262650- 7115595551+ 4412095251+
5862+  2100000052+ 1600017152+ 7300000052+ 1600689353+ 7000000051+ 6600136550- 3185376251+ 4411820551+
5863+  2000000052+ 1600085352+ 2480000053+ 1600839353+ 1000000051+ 6599010750- 3583520051+ 4411643951+
5864+  1600000052+ 1600085352+ 2240000053+ 1600948353+ 3000000051+ 6597885450- 4438450051+ 4411648551+
5865+  1400000052+ 1600051252+ 1475000053+ 1600926853+ 1000000051- 6598465550- 5066196451+ 4411746251+
5866+  1400000052+ 1600017052+ 9350000052+ 1600813353+ 2000000051+ 6597340650- 4818039351+ 4411806851+
5867+  1400000052+ 1599983052+ 1395000053+ 1600778253+ 3000000051+ 6596216150- 4907739351+ 4411880851+
5868+  1600000052+ 1599983052+ 1295000053+ 1600726153+ 4000000051+ 6595092050- 4277209451+ 4411857951+
5869+  8000000051+ 1599846752+ 1610000053+ 1600727753+ 8000000051- 6607599350- 1066191352+ 4412343451+
5870+  1300000052+ 1599795652+ 2100000052+ 1600490853+ 1000000051- 6608177250- 5190253851+ 4412498151+
5871+  1700000052+ 1599812652+ 1185000053+ 1600420053+              6607051650- 4007944151+ 4412424951+
5872+  1000000052+ 1599710552+ 1457500053+ 1600395753+ 2000000051- 6609332450- 7287897551+ 4412731051+
5873+  1600000052+ 1599710552+ 5050000052+ 1600209253+ 1000000051+ 6608207050- 4142415651+ 4412685051+
5874+  1300000052+ 1599659552+ 1230000053+ 1600146153+ 1000000051+ 6607082150- 5250607751+ 4412801051+
5875+  1200000052+ 1599591552+ 1330000053+ 1600100253+ 3000000051+ 6605957450- 5710908351+ 4412966751+
5876+  1000000052+ 1599489452+ 9325000052+ 1599986553+ 4000000051- 6611640650- 7544572551+ 4413300051+
5877+  1500000052+ 1599472552+ 2600000052+ 1599758553+ 2000000051- 6613918750- 4640653351+ 4413336251+
5878+  1800000052+ 1599506652+ 1315000053+ 1599710153+ 3000000051+ 6612793550- 3804997251+ 4413219851+
5879+  2300000052+ 1599625852+ 2040000053+ 1599785053+ 5000000051+ 6611668750- 3063878351+ 4412889851+
5880+  2100000052+ 1599710952+ 2730000053+ 1599977253+ 1000000051+ 6610544250- 3445376251+ 4412673751+
5881+  1800000052+ 1599744952+ 2435000053+ 1600119253+              6609420250- 3974863951+ 4412590051+
5882+  1600000052+ 1599745052+ 1580000053+ 1600115853+ 1000000051- 6609996650- 4450837551+ 4412596551+
5883+  1700000052+ 1599762052+ 1345000053+ 1600072453+              6608873050- 4033638251+ 4412528051+
5884+  1200000052+ 1599694152+ 1660000053+ 1600082653+ 3000000051- 6612848450- 6285983351+ 4412766851+
5885+  1900000052+ 1599745152+ 7700000052+ 1599941553+ 1000000051+ 6611724750- 3526426351+ 4412587951+
5886+  1400000052+ 1599711252+ 1735000053+ 1599964553+              6610601450- 4974039351+ 4412671451+
5887+  1200000052+ 1599643352+ 1170000053+ 1599891453+ 1000000051- 6611177250- 5841175051+ 4412853451+
5888+  2100000052+ 1599728352+ 1260000053+ 1599833753+ 3000000051+ 6610054350- 3254276251+ 4412595151+
5889+  1400000052+ 1599694352+ 1895000053+ 1599883853+              6608931950- 5005239351+ 4412683251+
5890+  2000000052+ 1599762352+ 1375000053+ 1599845753+ 3000000051+ 6607809850- 3432687551+ 4412475151+
5891+  1200000052+ 1599694452+ 1835000053+ 1599885653+ 1000000051- 6608385750- 5992462551+ 4412676351+
5892+  1100000052+ 1599609652+ 7250000052+ 1599737153+ 5000000051- 6615750250- 6989022751+ 4412977051+
```

5893+	2100000052+	1599694652+	7450000052+	1599592053+	6000000051+	6614627550-	3187326251+	4412703951+
5894+	1300000052+	1599643752+	2996000053+	1599829053+	1000000051-	6615201950-	5775313851+	4412891851+
5895+	1700000052+	1599660752+	1080000053+	1599740853+	1000000051+	6614079750-	3991082451+	4412815851+
5896+	9000000051+	1599542152+	1265000053+	1599684053+	4000000051-	6619742250-	8483716751+	4413204351+
5897+	1300000052+	1599491352+	6050000052+	1599515353+	7000000051+	6618619650-	5119357751+	4413301651+
5898+	1600000052+	1599491452+	1665000053+	1599526453+	4000000051+	6617497550-	4340340651+	4413289251+
5899+	1700000052+	1599508452+	1330000053+	1599480753+	4000000051-	6623156550-	4501817651+	4413305251+
5900+	1700000052+	1599525452+	1490000053+	1599462253+	2000000051+	6622033950-	4056923551+	4413241051+
5901+	1100000052+	1599440852+	1710000053+	1599480953+		6620911750-	6324390951+	4413463851+
5902+	1900000052+	1599491752+	1085000053+	1599393753+	5000000051+	6619789950-	3571686851+	4413294351+
5903+	1300000052+	1599441052+	2315000053+	1599515053+	2000000051+	6618668550-	5478457751+	4413441051+
5904+	1600000052+	1599441152+	9050000052+	1599397353+	1000000051+	6617547450-	4210665651+	4413406651+
5905+	1700000052+	1599458152+	1365000053+	1599357653+	2000000051-	6619813750-	4272144151+	4413381251+
5906+	2500000052+	1599610652+	1625000053+	1599362053+	7000000051+	6618692950-	2773450051+	4412947351+
5907+	2200000052+	1599712252+	3185000053+	1599630453+	4000000051+	6617572450-	3345229551+	4412698851+
5908+	1500000052+	1599695352+	2550000053+	1599791353+	1000000051-	6618144950-	4924100051+	4412779951+
5909+	1200000052+	1599627752+	1172500053+	1599719053+	1000000051-	6618717250-	5841743851+	4412961351+
5910+	1400000052+	1599593952+	1070000053+	1599629353+	5000000051+	6617597350-	4844364351+	4413025251+
5911+	1200000052+	1599526352+	1321666753+	1599582353+	3000000051+	6621553050-	6209012551+	4413253251+
5912+	2000000052+	1599594052+	1055000053+	1599490253+	6000000051+	6620433050-	3389007551+	4413036551+
5913+	1600000052+	1599594152+	2570000053+	1599654353+	4000000051+	6619313450-	4494756351+	4413050451+
5914+	2000000052+	1599661852+	1860000053+	1599698453+	6000000051+	6618194150-	3498890051+	4412857251+
5915+	1000000052+	1599560452+	2270000053+	1599811753+	3000000051-	6622147150-	7709710051+	4413205751+
5916+	1800000052+	1599594352+	7750000052+	1599672353+	4000000051+	6621027750-	3723097251+	4413074451+
5917+	1900000052+	1599645152+	2185000053+	1599771253+	9000000051+	6619908750-	3729739951+	4412937351+
5918+	2100000052+	1599729652+	2545000053+	1599930953+	2000000051+	6618790150-	3421326251+	4412717451+
5919+	1700000052+	1599746652+	2160000053+	1600025553+	2000000051+	6617671950-	4164517651+	4412672951+
5920+	1300000052+	1599695952+	1750000053+	1600050953+	2000000051+	6616554150-	5359807751+	4412802951+
5921+	1700000052+	1599712952+	1270000053+	1599995153+	4000000051+	6615436650-	4021594151+	4412732751+
5922+	2100000052+	1599797452+	1755000053+	1600021353+	5000000051+	6614319550-	3318626251+	4412490251+
5923+	8000000051+	1599662352+	2321666753+	1600143153+	5000000051-	6621644450-	1015476952+	4412975051+
5924+	1300000052+	1599611752+	3650000052+	1599934653+	3000000051-	6625590850-	5530496251+	4413128451+
5925+	1900000052+	1599662452+	7550000052+	1599792053+	2000000051+	6624472650-	3524271151+	4412950251+
5926+	1000000052+	1599561352+	2040000053+	1599866353+	2000000051-	6626729750-	7446920051+	4413270351+
5927+	1700000052+	1599578252+	7700000052+	1599726353+	4000000051+	6625611650-	3941300051+	4413185651+
5928+	1000000052+	1599477152+	1766666753+	1599754553+	5000000051-	6632928550-	7972300051+	4413561051+
5929+	1800000052+	1599510952+	5512500052+	1599577653+	1000000051-	6633496450-	3800272951+	4413444551+
5930+	1800000052+	1599544752+	1575000053+	1599573553+	1000000051-	6634064150-	3955541751+	4413357651+
5931+	1200000052+	1599477352+	1491666753+	1599555353+	1000000051-	6634631650-	5914354251+	4413547551+
5932+	2300000052+	1599595452+	1140000053+	1599477853+	5000000051+	6633513150-	2957052251+	4413194451+
5933+	1600000052+	1599595552+	2745000053+	1599670953+	2000000051+	6632395150-	4524615651+	4413213151+
5934+	2100000052+	1599679852+	1880000053+	1599718153+	4000000051+	6631277450-	3334876251+	4412974651+
5935+	1100000052+	1599595652+	1897500053+	1599768353+	1000000051-	6631845050-	6552743251+	4413222551+
5936+	1800000052+	1599629452+	1155000053+	1599693453+	4000000051+	6630727850-	3780730651+	4413102651+
5937+	1600000052+	1599629452+	1970000053+	1599755853+	2000000051+	6629610950-	4392381351+	4413099151+
5938+	9000000051+	1599511652+	1430000053+	1599727253+	8000000051-	6641967050-	9422655651+	4413573751+
5939+	1200000052+	1599444452+	1700000052+	1599486453+	3000000051+	6645900050-	5947008351+	4413767451+
5940+	1500000052+	1599427652+	7525000052+	1599343953+	1000000051-	6646464650-	4596955051+	4413796351+
5941+	1600000052+	1599427752+	1271250053+	1599288653+	1000000051-	6647029150-	4398157151+	4413793651+
5942+	2900000052+	1599646652+	1350000053+	1599246753+	3000000051+	6645910550-	2365017251+	4413186851+
5943+	1400000052+	1599613052+	3310000053+	1599534553+	1000000051+	6644792250-	5281164351+	4413296551+
5944+	2800000052+	1599814952+	1405000053+	1599501853+	6000000051+	6643674350-	2454844651+	4412719951+
5945+	2200000052+	1599915952+	3905000053+	1599889653+	5000000051+	6642556850-	3434575051+	4412493651+
5946+	1500000052+	1599899152+	2731250053+	1600079953+	1000000051-	6643121450-	4957087551+	4412579551+
5947+	1600000052+	1599899152+	1255000053+	1600021953+	2000000051+	6642004450-	4270384451+	4412555751+
5948+	1800000052+	1599932852+	1440000053+	1599995053+	2000000051+	6640887750-	3823955651+	4412444351+
5949+	1400000052+	1599899152+	1710000053+	1600013553+	1000000051-	6641452350-	5112021451+	4412547251+
5950+	1300000052+	1599848752+	1105000053+	1599930353+	2000000051+	6640336150-	5224357751+	4412658151+
5951+	1600000052+	1599848852+	1305000053+	1599880753+	3000000051+	6639220350-	4278915651+	4412635651+
5952+	1700000052+	1599865652+	1525000053+	1599868153+	2000000051+	6638104850-	4062544151+	4412573151+
5953+	1600000052+	1599865652+	1825000053+	1599905953+	1000000051+	6636989850-	4367640651+	4412565551+
5954+	1700000052+	1599882452+	1365000053+	1599866553+		6635875050-	4036850051+	4412498551+
5955+	2200000052+	1599983252+	1705000053+	1599884153+	3000000051+	6634760750-	3161575051+	4412209651+
5956+	1500000052+	1599966452+	2650000053+	1600060553+	3000000051+	6633646750-	4808966751+	4412272051+
5957+	1000000052+	1599865752+	1431666753+	1600032253+	4000000051+	6639247950-	7680845051+	4412615051+
5958+	1000000052+	1599765052+	3740000052+	1599826453+	2000000051+	6641490450-	6992102051+	4412885651+
5959+	1300000052+	1599714752+	5650000052+	1599652853+	1000000051+	6640375950-	5110957751+	4412980851+
5960+	2000000052+	1599781952+	1260000053+	1599595853+	7000000051+	6639261750-	3416990051+	4412771951+
5961+	1600000052+	1599781952+	2590000053+	1599761953+	5000000051+	6638148050-	4498168851+	4412786251+
5962+	2500000052+	1599932952+	2140000053+	1599852553+	5000000051+	6637034650-	2829688051+	4412371351+
5963+	1400000052+	1599899452+	3375000053+	1600150253+		6635921550-	5293839351+	4412500651+
5964+	2000000052+	1599966552+	1305000053+	1600100753+	5000000051+	6634808950-	3423132551+	4412293251+
5965+	2100000052+	1600050352+	2155000053+	1600193853+	6000000051+	6633696650-	3370626251+	4412064051+
5966+	1500000052+	1600033552+	2830000053+	1600399953+	4000000051+	6632584650-	4841726751+	4412131551+
5967+	9000000051+	1599916252+	1445000053+	1600373953+	7000000051-	6643204350-	9204983351+	4412583351+
5968+	1800000052+	1599949752+	3650000052+	1600166953+	4000000051+	6642091250-	3660913951+	4412441651+
5969+	1700000052+	1599966552+	2535000053+	1600323553+	1000000051+	6640978450-	4224738251+	4412408251+
5970+	1700000052+	1599983252+	1415000053+	1600292453+		6639866050-	4044879451+	4412342851+
5971+	1800000052+	1600016752+	1540000053+	1600282353+		6638754050-	3839122251+	4412234751+
5972+	9000000051+	1599899552+	1576666753+	1600278453+	6000000051-	6647689250-	9022700051+	4412669051+
5973+	1300000052+	1599849352+	5000000052+	1600094253+	4000000051+	6646576350-	5097307751+	4412762251+
5974+	1900000052+	1599899652+	1030000053+	1599998753+	2000000051+	6645463750-	3563784251+	4412593451+
5975+	1900000052+	1599949852+	2335000053+	1600121853+	3000000051+	6644351550-	3751292151+	4412461951+
5976+	1800000052+	1599983352+	1775000053+	1600151053+	4000000051+	6643239650-	3874763951+	4412360751+
5977+	1000000052+	1599882952+	2385000053+	1600282353+	5000000051+	6642128250-	7141105051+	4412646151+
5978+	1000000052+	1599782552+	6250000052+	1600119253+	2000000051-	6644362750-	7060625051+	4412923051+
5979+	1900000052+	1599832752+	8650000052+	1599996253+	3000000051+	6643251450-	3540076351+	4412749651+
5980+	1200000052+	1599765952+	1945000053+	1600053953+	2000000051+	6642140550-	5850820851+	4412930051+
5981+	1500000052+	1599749252+	1070000053+	1599965353+		6641029950-	4521406751+	4412947051+
5982+	1600000052+	1599749252+	1505000053+	1599949453+	5000000051+	6639919850-	4313040651+	4412930351+
5983+	1800000052+	1599782752+	1865000053+	1599993753+	2000000051+	6638810050-	3888413951+	4412831651+
5984+	1700000052+	1599799552+	1625000053+	1599997953+	1000000051+	6637700550-	4078602951+	4412772351+
5985+	1800000052+	1599832952+	1795000053+	1600030553+	2000000051+	6636591550-	3877797251+	4412671751+
5986+	6000000051+	1599665952+	1285000053+	1599977953+	9000000051-	6650517950-	1440134252+	4413205551+
5987+	2300000052+	1599782952+	2300000052+	1599749053+	5000000051+	6649407050-	2849039151+	4412922051+
5988+	1800000052+	1599816352+	3415000053+	1600052253+	4000000051+	6648296650-	4123497251+	4412867651+
5989+	1500000052+	1599799652+	2085000053+	1600133253+	1000000051+	6647186550-	4706136751+	4412913551+
5990+	1500000052+	1599783052+	1305000053+	1600083953+	2000000051+	6646076850-	4564176751+	4412937251+
5991+	1300000052+	1599732952+	1430000053+	1600055553+		6644967550-	5292607751+	4413056451+
5992+	1500000052+	1599716352+	9650000052+	1599949553+	5000000051+	6643858550-	4502296751+	4413070451+
5993+	1500000052+	1599699652+	1900000053+	1599999653+	5000000051+	6642749950-	4672466751+	4413111051+
5994+	1500000052+	1599683052+	1715000053+	1600018853+	4000000051+	6641641650-	4638796751+	4413146351+
5995+	1200000052+	1599616352+	1735000053+	1600041353+	1000000051+	6640533850-	5803045851+	4413320251+
5996+	1500000052+	1599599752+	1010000053+	1599942953+	3000000051+	6639426350-	4510486751+	4413335551+
5997+	1300000052+	1599549852+	1625000053+	1599947153+	2000000051+	6638319250-	5333557751+	4413460251+
5998+	2800000052+	1599749952+	1410000053+	1599915453+	6000000051+	6637212450-	2455332151+	4412888851+
5999+	1800000052+	1599783352+	3640000053+	1600255553+	4000000051+	6636106050-	4157622251+	4412841051+
6000+	1700000052+	1599800052+	1915000053+	1600307953+	1000000051+	6635000050-	4125173551+	4412790051+

APPENDIX B

COMBINING DEMAND AND LEAD TIME

APPENDIX B-1

INPUT DISTRIBUTIONS

POISSON DEMAND CONDITIONALS

```
3678790050+ 3678790050+ 1839400050+ 6131300049+ 1532800049+ 3066000048+ 5110000047+ 7300000046+
9000000045+ 1000000045+
     1000-          1           1                 1000195         199
1353350050+ 2706710050+ 2706710050+ 1804470050+ 9022400049+ 3608900049+ 1203000049+ 3437000048+
8590000047+ 1910000047+ 3800000046+ 7000000045+ 1000000045+
     1000-          2           2                 2000195     1000196         199
4978700049+ 1493610050+ 2240420050+ 2240420050+ 1680310050+ 1008190050+ 5040900049+ 2160400049+
8102000048+ 2701000048+ 8100000047+ 2210000047+ 5500000046+ 1300000046+ 3000000045+ 1000000045+
     1000-          3           3                 3000195     1000197             199
1831600049+ 7326300049+ 1465250050+ 1953670050+ 1953670050+ 1562930050+ 1041960050+ 5954000049+
2977000049+ 1323100049+ 5292000048+ 1925000048+ 6420000047+ 1970000047+ 5600000046+ 1500000046+
4000000045+ 1000000045+
     1000-          4           4                 4000195     2000196     1000198
6738000048+ 3369000049+ 8422400049+ 1403740050+ 1754670050+ 1754670050+ 1462230050+ 1044450050+
6527800049+ 3626600049+ 1813300049+ 8242000048+ 3434000048+ 1321000048+ 4720000047+ 1570000047+
4900000046+ 1400000046+ 4000000045+ 1000000045+
     1000-          5           5                 5000195         199
2479000048+ 1487300049+ 4461800049+ 8923500049+ 1338530050+ 1606230050+ 1606230050+ 1376770050+
1032580050+ 6883800049+ 4130300049+ 2252900049+ 1126400049+ 5199000048+ 2228000048+ 8910000047+
3340000047+ 1180000047+ 3900000046+ 1200000046+ 4000000045+ 1000000045+
     1000-          6           6                 6000195     3000196     2000197         199
9120000047+ 6383000048+ 2234100049+ 5212900049+ 9122600049+ 1277170050+ 1490030050+ 1490030050+
1303770050+ 1014050050+ 7098300049+ 4517100049+ 2635000049+ 1418800049+ 7094000048+ 3311000048+
1448000048+ 5960000047+ 2320000047+ 8500000046+ 3000000046+ 1000000046+ 3000000045+ 1000000045+
     1000-          7           7                 7000195         199
3350000047+ 2684000048+ 1073500049+ 2862600049+ 5725200049+ 9160400049+ 1221380050+ 1395870050+
1395870050+ 1240770050+ 9926200049+ 7219000049+ 4812700049+ 2961600049+ 1692400049+ 9026000048+
4513000048+ 2124000048+ 9440000047+ 3970000047+ 1590000047+ 6100000046+ 2200000046+ 8000000045+
3000000045+ 1000000045+
     1000-          8           8                 8000195     4000196     2000198
1230000047+ 1111000048+ 4998000048+ 1499400049+ 3373700049+ 6072700049+ 9109000049+ 1171160050+
1317560050+ 1317560050+ 1185800050  9702000049+ 7276500049+ 5037600049+ 3238400049+ 1943100049+
1093000049+ 5786000048+ 2893000048+ 1370000048+ 6170000047+ 2640000047+ 1080000047+ 4200000046+
1600000046+ 6000000045+ 2000000045+ 1000000045+
     1000-          9           9                 9000195     3000197             199
4500000046+ 4540000047+ 2270000048+ 7567000048+ 1891700049+ 3783300049+ 6305500049+ 9007900049+
1125990050+ 1251100050+ 1251100050+ 1137360050+ 9478000049+ 7290800049+ 5207700049+ 3471800049+
2169900049+ 1276400049+ 7091000048+ 3732000048+ 1866000048+ 8890000047+ 4040000047+ 1760000047+
7300000046+ 2900000046+ 1100000046+ 4000000045+ 1000000045+ 1000000045+
     1000-         10          10                10000195     5000196         199
1700000046+ 1840000047+ 1010000048+ 3705000048+ 1018900049+ 2241500049+ 4109500049+ 6457700049+
8879400049+ 1085260050+ 1193780050+ 1193780050+ 1094300050+ 9259500049+ 7275300049+ 5335200049+
3668000049+ 2373400049+ 1450400049+ 8397000048+ 4618000048+ 2419000048+ 1210000048+ 5780000047+
2650000047+ 1170000047+ 4900000046+ 2000000046+ 8000000045+ 3000000045+ 1000000045+
     1000-         11          11                11000195         199
6000000045+ 7400000046+ 4420000047+ 1770000048+ 5309000048+ 1274100049+ 2548100049+ 4368200049+
6552300049+ 8736400049+ 1048370050+ 1143680050+ 1143680050+ 1055700050+ 9048900049+ 7239100049+
5429300049+ 3832500049+ 2555000049+ 1613700049+ 9682000048+ 5533000048+ 3018000048+ 1574000048+
7870000047+ 3780000047+ 1740000047+ 7800000046+ 3300000046+ 1400000046+ 5000000045+ 2000000045+
1000000045+
     1000-         12          12                12000195     6000196     4000197     3000198
2000000045+ 2900000046+ 1910000047+ 8280000047+ 2690000048+ 6994000048+ 1515300049+ 2814100049+
4573000049+ 6605400049+ 8587000049+ 1014830050+ 1099400050+ 1099400050+ 1020870050+ 8847500049+
7188600049+ 5497200049+ 3970200049+ 2716400049+ 1765700049+ 1093000049+ 6459000048+ 3651000048+
1977000048+ 1028000048+ 5140000047+ 2480000047+ 1150000047+ 5200000046+ 2200000046+ 9000000045+
4000000045+ 1000000045+ 1000000045+
     1000-         13          13                13000195         199
1000000045+ 1200000046+ 8100000046+ 3800000047+ 1331000048+ 3737000048+ 8696000048+ 1739200049+
3043600049+ 4734400049+ 6628200049+ 8435900049+ 9841800049+ 1059890050+ 1059890050+ 9892300049+
8655800049+ 7128300049+ 5544200049+ 4085200049+ 2859700049+ 1906400049+ 1213200049+ 7385000048+
4308000048+ 2412000048+ 1299000048+ 6740000047+ 3370000047+ 1630000047+ 7600000046+ 3400000046+
1500000046+ 6000000045+ 3000000045+ 1000000045+
     1000-         14          14                14000195     7000196         199
             5000000045+ 3400000046+ 1720000047+ 6450000047+ 1936000048+ 4839000048+ 1037000049+
1944400049+ 3240700049+ 4861100049+ 6628700049+ 8285900049+ 9560700049+ 1024360050+ 1024360050+
9603400049+ 8473600049+ 7061300049+ 5574700049+ 4181000049+ 2986500049+ 2036200049+ 1328000049+
8300000048+ 4980000048+ 2873000048+ 1596000048+ 8550000047+ 4420000047+ 2210000047+ 1070000047+
5000000046+ 2300000046+ 1000000046+ 4000000045+ 2000000045+ 1000000045+
     1000-         15          15                15000195     5000197             199
             2000000045+ 1400000046+ 7700000046+ 3070000047+ 9830000047+ 2622000048+ 5994000048+
1198700049+ 2131100049+ 3409800049+ 4959700049+ 6612900049+ 8138900049  9301600049+ 9921800049+
9921800049+ 9338100049+ 8300600049+ 6989900049+ 5592000049+ 4260500049+ 3098600049+ 2155500049+
1437000049+ 9197000048+ 5660000048+ 3354000048+ 1916000048+ 1057000048+ 5640000047+ 2910000047+
1460000047+ 7100000046+ 3300000046+ 1500000046+ 7000000045+ 3000000045+ 1000000045+ 1000000045+
     1000-         16          16                16000195     8000196     4000198
             1000000045+ 6000000045+ 3400000046+ 1440000047+ 4900000047+ 1388000048+ 3371000048+
7163000048+ 1352900049+ 2300000049+ 3554500049+ 5035500049+ 6584900049+ 7996000049+ 9062100049+
9628500049+ 9628500049+ 9093500049+ 8136300049+ 6915900049+ 5598600049+ 4326200049+ 3197600049+
2265000049+ 1540200049+ 1007000049+ 6341000048+ 3850000048+ 2257000048+ 1279000048+ 7010000047+
3730000047+ 1920000047+ 9600000046+ 4700000046+ 2200000046+ 1000000046+ 5000000045+ 2000000045+
1000000045+
     1000-         17          17                17000195         199
             2000000045+ 1500000046+ 6700000046+ 2400000047+ 7190000047+ 1850000048+
4163000048+ 8325000048+ 1498500049+ 2452100049+ 3678200049+ 5092900049+ 6548000049+ 7857600049+
8839700049+ 9359700049+ 9359700049+ 8867100049+ 7980400049+ 6840300049+ 5596600049+ 4380000049+
3285000049+ 2365200049+ 1637400049+ 1091600049+ 7018000048+ 4356000048+ 2613000048+ 1517000048+
8540000047+ 4660000047+ 2460000047+ 1270000047+ 6300000046+ 3100000046+ 1500000046+ 7000000045+
3000000045+ 1000000045+ 1000000045+
     1000-         18          18                18000195     9000196     6000197         199
             1000000045+ 6000000045+ 3000000046+ 1160000047+ 3660000047+ 9940000047+
2360000048+ 4982000048+ 9466000048+ 1635100049+ 2588900049+ 3783700049+ 5135100049+ 6504400049+
7724000049+ 8632700049+ 9112300049+ 9112300049+ 8656700049+ 7832300049+ 6764200049+ 5587800049+
4423700049+ 3362000049+ 2456900049+ 1728900049+ 1173200049+ 7686000048+ 4868000048+ 2984000048+
1772000048+ 1020000048+ 5700000047+ 3090000047+ 1630000047+ 8400000046+ 4200000046+ 2000000046+
1000000046+ 4000000045+ 2000000045+ 1000000045+
     1000-         19          19                19000195         199
                                 3000000045+ 1400000046+ 5500000046+ 1830000047+ 5230000047+
1309000048+ 2908000048+ 5816000048+ 1057500049+ 1762500049+ 2711600049+ 3873700049+ 5164900049+
6456100049+ 7595400049+ 8439400049+ 8883500049+ 8883500049+ 8460500049+ 7691400049+ 6688100049+
5573500049+ 4458800049+ 3429800049+ 2540600049+ 1814700049+ 1251700049+ 8344000048+ 5383000048+
3364000048+ 2039000048+ 1199000048+ 6850000047+ 3810000047+ 2060000047+ 1080000047+ 5600000046+
2800000046+ 1400000046+ 6000000045+ 3000000045+ 1000000045+ 1000000045+
```

```
      1000-          20          20                    20000195    10000196     5000198
                                                1000000045+ 6000000045+ 2600000046+ 9000000046+ 2710000047+
7110000047+ 1660000048+ 3485000048+ 6654000048+ 1164400049+ 1881000049+ 2821500049+ 3950100049+
5184500049+ 6404400049+ 7471700049+ 8258200049+ 8671200049+ 8671200049+ 8277000049+ 7557300049+
6612600049+ 5554600049+ 4486400049+ 3489400049+ 2617100049+ 1895100049+ 1326600049+ 8987000048+
5897000048+ 3753000048+ 2318000048+ 1391000048+ 8110000047+ 4600000047+ 2540000047+ 1370000047+
7200000046+ 3700000046+ 1800000046+ 9000000045+ 4000000045+ 2000000045+ 1000000045+
      1000-          21          21                    21000195    7000197              199
                                                3000000045+ 1200000046+ 4400000046+ 1380000047+
3800000047+ 9280000047+ 2042000048+ 4083000048+ 7486000048+ 1266900049+ 1990800049+ 2919900049+
4014800049+ 5195600049+ 6350200049+ 7352900049+ 8088200049+ 8473300049+ 8473300049+ 8104900049+
7429500049+ 6538000049+ 5532100049+ 4507700049+ 3541700049+ 2686800049+ 1970300049+ 1398300049+
9613000048+ 6409000048+ 4147000048+ 2607000048+ 1593000048+ 9470000047+ 5480000047+ 3090000047+
1700000047+ 9100000046+ 4800000046+ 2400000046+ 1200000046+ 6000000045+ 3000000045+ 1000000045+
1000000045+
      1000-          22          22                    22000195    11000196        199
                                                1000000045+ 6000000045+ 2100000046+ 6900000046+
1990000047+ 5090000047+ 1171000048+ 2449000048+ 4695000048+ 8306000048+ 1364600049+ 2092400049+
3007800049+ 4069400049+ 5199800049+ 6294500049+ 7238700049+ 7928100049+ 8288400049+ 8288400049+
7943100049+ 7307600049+ 6464500049+ 5506800049+ 4523400049+ 3587500049+ 2750400049+ 2040600049+
1466700049+ 1022300049+ 6915000048+ 4544000048+ 2903000048+ 1805000048+ 1092000048+ 6430000047+
3700000047+ 2080000047+ 1140000047+ 6100000046+ 3200000046+ 1600000046+ 8000000045+ 4000000045+
2000000045+ 1000000045+
      1000-          23          23                    23000195        199
                                                1000000045+ 3000000045+ 1000000046+ 3400000046+
1030000047+ 2750000047+ 6600000047+ 1439000048+ 2878000048+ 5314000048+ 9109000048+ 1457500049+
2186200049+ 3086400049+ 4115200049+ 5198200049+ 6237800049+ 7128900049+ 7777000049+ 8115200049+
8115200049+ 7790500049+ 7191300049+ 6392200049+ 5479100049+ 4534400049+ 3627500049+ 2808400049+
2106300049+ 1531900049+ 1081300049+ 7415000048+ 4943000048+ 3206000048+ 2025000048+ 1246000048+
7480000047+ 4380000047+ 2500000047+ 1400000047+ 7600000046+ 4100000046+ 2100000046+ 1100000046+
5000000045+ 3000000045+ 1000000045+ 1000000045+
      1000-          24          24                    24000195    12000196     8000197     6000198
                                                                  1000000045+ 2000000045+ 8000000045+
2600000046+ 7600000046+ 1990000047+ 4700000047+ 1018000048+ 2036000048+ 3781000048+ 6553000048+
1064900049+ 1628600049+ 2352500049+ 3219200049+ 4184900049+ 5181300049+ 6123400049+ 6922100049+
7498900049+ 7798900049+ 7798900049+ 7510000049+ 6973600049+ 6252200049+ 5418600049+ 4544600049+
3692500049+ 2909200049+ 2224700049+ 1652600049+ 1193600049+ 8387000048+ 5739000048+ 3826000048+
2487000048+ 1577000048+ 9760000047+ 5900000047+ 3490000047+ 2020000047+ 1140000047+ 6300000046+
3400000046+ 1800000046+ 9000000045+ 5000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          26          26                    13000196                199
                                                                        1000000045+ 4000000045+
1300000046+ 3900000046+ 1070000047+ 2620000047+ 5890000047+ 1223000048+ 2359000048+ 4246000048+
7166000048+ 1138100049+ 1707100049+ 2425900049+ 3274900049+ 4210600049+ 5167600049+ 6066300049+
6824500049+ 7370500049+ 7654000049+ 7654000049+ 7380600049+ 6871600049+ 6184500049+ 5386500049+
4544800049+ 3718500049+ 2952900049+ 2278000049+ 1708500049+ 1246700049+ 8858000048+ 6133000048+
4140000048+ 2726000048+ 1752000048+ 1100000048+ 6750000047+ 4050000047+ 2380000047+ 1370000047+
7700000046+ 4200000046+ 2300000046+ 1200000046+ 6000000045+ 3000000045+ 2000000045+ 1000000045+
      1000-          27          27                     9000197                        199
                                                                                 2000000045+
6000000045+ 2000000046+ 5600000046+ 1440000047+ 3350000047+ 7220000047+ 1444000048+ 2695000048+
4717000048+ 7769000048+ 1208500049+ 1781000049+ 2493400049+ 3324500049+ 4231200049+ 5151000049+
6009500049+ 6730700049+ 7248400049+ 7516900049+ 7516900049+ 7257700049+ 6773800049+ 6118300049+
5353500049+ 4542400049+ 3740800049+ 2992600049+ 2327600049+ 1761400049+ 1297900049+ 9318000048+
6523000048+ 4455000048+ 2970000048+ 1934000048+ 1231000048+ 7660000047+ 4660000047+ 2780000047+
1620000047+ 9300000046+ 5200000046+ 2800000046+ 1500000046+ 8000000045+ 4000000045+ 2000000045+
1000000045+ 1000000045+
      1000-          28          28                    14000196                7000198

2000000045+ 5000000045+ 1500000046+ 4200000046+ 1040000047+ 2400000047+ 5130000047+ 1027000048+
1925000048+ 3397000048+ 5662000048+ 8941000048+ 1341100049+ 1915900049+ 2612600049+ 3407700049+
4259600049+ 5111500049+ 5897900049+ 6553200049+ 7021300049+ 7263500049+ 7263500049+ 7029100049+
6589800049+ 5990800049+ 5286000049+ 4530800049+ 3775700049+ 3061400049+ 2416900049+ 1859100049+
1394300049+ 1020300049+ 7288000048+ 5084000048+ 3467000048+ 2311000048+ 1507000048+ 9620000047+
6010000047+ 3680000047+ 2210000047+ 1300000047+ 7500000046+ 4200000046+ 2400000046+ 1300000046+
7000000045+ 4000000045+ 2000000045+ 1000000045+
      1000-          30          30                    15000196                10000197        199

            1000000045+ 4000000045+ 1100000046+ 3000000046+ 7500000046+ 1720000047+ 3660000047+
7320000047+ 1377000048+ 2449000048+ 4124000048+ 6599000048+ 1005500049+ 1462500049+ 2034800049+
2713100049+ 3472800049+ 4274200049+ 5065700049+ 5789400049+ 6388300049+ 6814200049+ 7034000049+
7034000049+ 6820900049+ 6419600049+ 5869400049+ 5217200049+ 4512200049+ 3799800049+ 3117700049+
2494200049+ 1946700049+ 1483200049+ 1103800049+ 8027000048+ 5708000048+ 3971000048+ 2704000048+
1802000048+ 1177000048+ 7530000047+ 4730000047+ 2910000047+ 1760000047+ 1040000047+ 6100000046+
3500000046+ 1900000046+ 1100000046+ 6000000045+ 3000000045+ 2000000045+ 1000000045+
      1000-          32          32                    16000196                8000198

            1000000045+ 2000000045+ 6000000045+ 1600000046+ 4100000046+ 9700000046+ 2140000047+
4400000047+ 8550000047+ 1567000048+ 2722000048+ 4492000048+ 7059000048+ 1058800049+ 1519200049+
2088900049+ 2757300049+ 3499700049+ 4277400049  5041200049+ 5736500049+ 6310200049+ 6717300049+
6927200049+ 6927200049+ 6723400049+ 6339200049+ 5811000049+ 5182800049+ 4500800049+ 3808400049+
3141900049+ 2528900049+ 1987000049+ 1524900049+ 1143700049+ 8387000048+ 6017000048+ 4224000048+
2904000048+ 1956000048+ 1291000048+ 8350000047+ 5300000047+ 3300000047+ 2020000047+ 1210000047+
7100000046+ 4100000046+ 2300000046+ 1300000046+ 7000000045+ 4000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          33          33                    11000197                        199

                  1000000045+ 3000000045+ 9000000045+ 2200000046+ 5400000046+ 1230000047+
2610000047+ 5220000047+ 9870000047+ 1766000048+ 3002000048+ 4861000048+ 7512000048+ 1110500049+
1573200049+ 2139500049+ 2797800049+ 3523200049+ 4278200049+ 5015800049+ 5684500049+ 6234700049+
6624300049+ 6825100049+ 6825100049+ 6630100049+ 6261700049+ 5754000049+ 5148300049+ 4488300049+
3815000049+ 3163700049+ 2561100049+ 2025000049+ 1564800049+ 1182300049+ 8739000048+ 6322000048+
4478000048+ 3107000048+ 2113000048+ 1409000048+ 9210000047+ 5910000047+ 3720000047+ 2300000047+
1400000047+ 8300000046+ 4900000046+ 2800000046+ 1600000046+ 9000000045+ 5000000045+ 3000000045+
1000000045+ 1000000045+
      1000-          34          34                    17000196                199

                              1000000045+ 2000000045+ 6000000045+ 1600000046+ 3900000046+
8800000046+ 1870000047+ 3740000047+ 7080000047+ 1274000048+ 2185000048+ 3575000048+ 5596000048+
8394000048+ 1208700049+ 1673600049+ 2231400049+ 2869000049+ 3561500049+ 4273800049+ 4963100049+
5583500049+ 6091100049+ 6449400049+ 6633700049+ 6633700049+ 6454400049+ 6114700049+ 5644300049+
5079900049+ 4460400049+ 3823200049+ 3200800049+ 2618800049+ 2095100049+ 1639600049+ 1255900049+
9419000048+ 6920000048+ 4983000048+ 3517000048+ 2435000048+ 1654000048+ 1103000048+ 7220000047+
4640000047+ 2930000047+ 1820000047+ 1110000047+ 6700000046+ 3900000046+ 2300000046+ 1300000046+
7000000045+ 4000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          36          36                    18000196                12000197    9000198

                                                1000000045+ 2000000045+ 5000000045+ 1200000046+
2800000046+ 6300000046+ 1340000047+ 2680000047+ 5090000047+ 9200000047+ 1590000048+ 2626000048+
```

```
4158000048+ 6321000048+ 9238000048+ 13001000049+ 17645000049+ 23120000049+ 29286000049+ 35899000049+
4263000049+ 4908900049+ 5486400049+ 5956700049+ 6287600049+ 6457500049+ 6457500049+ 6291900049+
5977300049+ 5540000049+ 5012400049+ 4429500049+ 3825500049+ 3230400049+ 2668600049+ 2157600049+
1708100049+ 1324600049+ 1006700049+ 7501000048+ 5482000048+ 3930000048+ 2766000048+ 1911000048+
1297000048+ 8640000047+ 5660000047+ 3650000047+ 2310000047+ 1440000047+ 8800000046+ 5300000046+
3200000046+ 1800000046+ 1100000046+ 6000000045+ 3000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          38          38                19000196                    199

                                                                 10000000045+ 20000000045+ 60000000045+
1600000046+ 3600000046+ 7900000046+ 1610000047+ 3150000047+ 5840000047+ 10360000048+ 17560000048+
2853000048+ 4451000048+ 6677000048+ 9644000048+ 13433000049+ 18065000049+ 23485000049+ 29546000049+
3600900049+ 4255600049+ 4881400049+ 5439300049+ 5892600049+ 6211100049+ 6374600049+ 6374600049+
6215200049+ 5912000049+ 5489700049+ 4979100049+ 4413300049+ 3824800049+ 3242800049+ 2690800049+
2186300049+ 1740100049+ 1357300049+ 1037900049+ 7784000048+ 5728000048+ 4137000048+ 2934000048+
2043000048+ 1398000048+ 9400000047+ 6210000047+ 4040000047+ 2580000047+ 1620000047+ 1010000047+
6100000046+ 3700000046+ 2200000046+ 1300000046+ 7000000045+ 4000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          39          39                13000197                              199

                                                                 10000000045+ 30000000045+
90000000045+ 2100000046+ 4600000046+ 9600000046+ 19200000047+ 36600000047+ 66500000047+ 11560000048+
1927000048+ 3084000048+ 4744000048+ 7028000048+ 10041000049+ 13849000049+ 18465000049+ 23826000049+
2978300049+ 3610100049+ 4247100049+ 4853900049+ 5393200049+ 5830500049+ 6137300049+ 6294700049+
6294700049+ 6141200049+ 5848700049+ 5440700049+ 4946100049+ 4396500049+ 3823100049+ 3253700049+
2711400049+ 2213400049+ 1770700049+ 1388800049+ 1068300049+ 8063000048+ 5972000048+ 4343000048+
3102000048+ 2177000048+ 1502000048+ 1018000048+ 6790000047+ 4450000047+ 2870000047+ 1820000047+
1140000047+ 7000000046+ 4200000046+ 2500000046+ 1500000046+ 9000000045+ 5000000045+ 3000000045+
2000000045+ 1000000045+
      1000-          40          40                20000196                    10000198

                                                                                          10000000045+
3000000045+ 6000000045+ 15000000046+ 33000000046+ 69000000046+ 13800000047+ 26300000047+ 48100000047+
8410000047+ 14130000048+ 22830000048+ 35510000048+ 53270000048+ 77150000048+ 10801000049+ 14633000049+
1920600049+ 2444400049+ 3019600049+ 3623500049+ 4227400049+ 4798600049+ 5303800049+ 5711700049+
5997300049+ 6143600049+ 6143600049+ 6000700049+ 5728000049+ 5346100049+ 4881200049+ 4362000049+
3816700049+ 3271500049+ 2748000049+ 2263100049+ 1827900049+ 1448500049+ 11266000049+ 8603000048+
6452000048+ 4754000048+ 3443000048+ 2451000048+ 1716000048+ 1181000048+ 8000000047+ 5330000047+
3500000047+ 2260000047+ 1440000047+ 9000000046+ 5600000046+ 3400000046+ 2000000046+ 12000000046+
7000000045+ 4000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          42          42                21000196                    14000197          199

10000000045+ 20000000045+ 50000000045+ 11000000046+ 24000000046+ 50000000046+ 99000000046+ 19000000047+
3480000047+ 6120000047+ 10360000048+ 16880000048+ 26520000048+ 40240000048+ 59020000048+ 83760000048+
1151700049+ 1535700049+ 1987300049+ 2498400049+ 3053500049+ 3631200049+ 4204600049+ 4743600049+
5218000049+ 5599800049+ 5866500049+ 6002900049+ 6002900049+ 5869500049+ 5614300049+ 5255900049+
4818000049+ 4326300049+ 3807200049+ 3284600049+ 2779300049+ 2307300049+ 1880000049+ 1504000049+
1181700049+ 9122000048+ 6920000048+ 5161000048+ 3785000048+ 2730000048+ 1937000048+ 1353000048+
9300000047+ 6300000047+ 4200000047+ 2760000047+ 1780000047+ 1140000047+ 7200000046+ 4400000046+
2700000046+ 1600000046+ 1000000046+ 6000000045+ 3000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          44          44                22000196                    11000198

            10000000045+ 30000000045+ 60000000045+ 14000000046+ 29000000046+ 60000000046+ 11700000047+
2190000047+ 39500000047+ 68300000047+ 11390000048+ 18300000048+ 28400000048+ 42610000048+ 61850000048+
8697000048+ 11860000049+ 15697000049+ 20182000049+ 25227000049+ 30681000049+ 36333000049+ 41923000049+
4716300049+ 5176500049+ 5546200049+ 5804200049+ 5936100049+ 5936100049+ 5807000049+ 5559900049+
5212400049+ 4786900049+ 4308200049+ 3801400049+ 3289700049+ 2793100049+ 2327600049+ 1904400049+
1530300049+ 1208100049+ 9374000048+ 7149000048+ 5362000048+ 3956000048+ 2871000048+ 2051000048+
1442000048+ 9980000047+ 6810000047+ 4570000047+ 3030000047+ 1970000047+ 1270000047+ 8000000046+
5000000046+ 3100000046+ 1900000046+ 1100000046+ 7000000045+ 4000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          45          45                15000197                              199

            10000000045+ 10000000045+ 30000000045+ 80000000045+ 17000000046+ 36000000046+ 71000000046+
1370000047+ 25200000047+ 44900000047+ 75800000047+ 12460000048+ 19760000048+ 30310000048+ 44970000048+
6464000048+ 90110000048+ 12191000049+ 16023000049+ 20474000049+ 25454000049+ 30813000049+ 36343000049+
4179500049+ 4689200049+ 5135800049+ 5494100049+ 5743800049+ 5871400049+ 5871400049+ 5746500049+
5507100049+ 5169900049+ 4756300049+ 4290000049+ 3795000049+ 3293800049+ 2805800049+ 2346700049+
1927600049+ 1555600049+ 1233800049+ 961900048+ 737500048+ 556100048+ 412600048+ 301300048+
2165000048+ 1532000048+ 1068000048+ 733000047+ 496000047+ 331000047+ 217000047+ 141000047+
9000000046+ 5700000046+ 3500000046+ 2200000046+ 1300000046+ 8000000045+ 5000000045+ 3000000045+
2000000045+ 1000000045+
      1000-          46          46                23000196                    199

                                                  10000000045+ 20000000045+ 60000000045+ 12000000046+ 26000000046+
5100000046+ 9900000046+ 18200000047+ 32400000047+ 55500000047+ 91900000047+ 14700000048+ 22770000048+
34150000048+ 49680000048+ 70130000048+ 96180000048+ 128240000049+ 166360000049+ 210140000049+ 258640000049+
3103600049+ 3633500049+ 4152600049+ 4635400049+ 5056800049+ 5394000049+ 5628500049+ 5748200049+
5748200049+ 5630900049+ 5405700049+ 5087700049+ 4696400049+ 4253300049+ 3780700049+ 3299500049+
2828200049+ 2381600049+ 1971000049+ 1603500049+ 1282800049+ 1009400049+ 781500048+ 595400048+
4466000048+ 3298000048+ 2398000048+ 1718000048+ 1213000048+ 844000047+ 579000047+ 391000047+
2610000047+ 1710000047+ 1110000047+ 7100000046+ 4500000046+ 2800000046+ 1700000046+ 1000000046+
6000000045+ 4000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          48          48                24000196                    16000197    12000198

                                                                 10000000045+ 20000000045+ 50000000045+
1100000046+ 2200000046+ 4400000046+ 8300000046+ 15100000047+ 26500000047+ 45100000047+ 74200000047+
1183000048+ 1829000048+ 2743000048+ 3997000048+ 5662000048+ 7804000048+ 10474000049+ 13697000049+
1746400049+ 2172300049+ 2637900049+ 3128600049+ 3626400049+ 4109900049+ 4556600049+ 4944400049+
5253400049+ 5467800049+ 5577200049+ 5577200049+ 5469900049+ 5263500049+ 4971100049+ 4609600049+
4198000049+ 3756100049+ 3302800049+ 2854900049+ 2426700049+ 2028900049+ 1668900049+ 1351000049+
1076600049+ 8447000048+ 6527000048+ 4969000048+ 3726000048+ 2754000048+ 2007000048+ 1441000048+
1021000048+ 7130000047+ 4920000047+ 3340000047+ 2240000047+ 1490000047+ 9700000046+ 6300000046+
4000000046+ 2500000046+ 1600000046+ 1000000046+ 6000000045+ 4000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          51          51                17000197                              199

                                                                 10000000045+ 10000000045+ 30000000045+
6000000045+ 13000000046+ 27000000046+ 51000000046+ 96000000046+ 17100000047+ 29700000047+ 49900000047+
8100000047+ 12770000048+ 19530000048+ 29010000048+ 41910000048+ 58890000048+ 80590000048+ 10746000049+
1396900049+ 1771700049+ 2193600049+ 2652700049+ 3135000049+ 36226000049+ 40952000049+ 45308000049+
4908400049+ 5208900049+ 5417300049+ 5523500049+ 5523500049+ 5419300049+ 5218500049+ 4933900049+
4581500049+ 4179600049+ 3747200049+ 3302600049+ 2862300049+ 24400000049+ 20464000049+ 16891000049+
```

```
1372400049+ 1097900049+ 8650000048+ 6714000048+ 5134000048+ 3869000048+ 2874000048+ 2105000048+
1520000048+ 1083000048+ 7610000047+ 5280000047+ 3610000047+ 2440000047+ 1630000047+ 1070000047+
7000000046+ 4500000046+ 2800000046+ 1800000046+ 1100000046+ 7000000045+ 4000000045+ 2000000045+
1000000045+ 1000000045+
      1000-          52          52                13000198

                                                                                          1000000045+
2000000045+ 5000000045+ 1000000046+ 1900000046+ 3700000046+ 6900000046+ 1250000047+ 2170000047+
3670000047+ 6000000047+ 9540000047+ 1471000048+ 2207000048+ 3221000048+ 4577000048+ 6337000048+
8555000048+ 1126700049+ 1448600049+ 1819200049+ 2232700049+ 2679200049+ 3145100049+ 3613600049+
4065300049+ 4480100049+ 4838500049+ 5123100049+ 5320200049+ 5420500049+ 5420500049+ 5322000049+
5131900049+ 4861800049+ 4526500049+ 4142900049+ 3728600049+ 3300800049+ 2874800049+ 2464200049+
2079100049+ 1727300049+ 1413200049+ 1139000049+ 9045000048+ 7079000048+ 5461000048+ 4153000048+
3115000048+ 2304000048+ 1681000048+ 1211000048+ 8600000047+ 6030000047+ 4180000047+ 2850000047+
1930000047+ 1280000047+ 8500000046+ 5500000046+ 3500000046+ 2200000046+ 1400000046+ 9000000045+
5000000045+ 3000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          54          54                18000197                                199


1000000045+ 2000000045+ 3000000045+ 7000000045+ 1400000046+ 2700000046+ 5000000046+ 9100000046+
1590000047+ 2700000047+ 4440000047+ 7110000047+ 1106000048+ 1674000048+ 2467000048+ 3542000048+
4959000048+ 6773000048+ 9031000048+ 1176100049+ 1496900049+ 1862800049+ 2267700049+ 2702000049+
3152300049+ 3602600049+ 4034900049+ 4430500049+ 4771300049+ 5041400049+ 5228100049+ 5323200049+
5323200049+ 5229800049+ 5049400049+ 4792700049+ 4473200049+ 4106500049+ 3709100049+ 3297000049+
2884900049+ 2485400049+ 2108800049+ 1762600049+ 1451600049+ 1178100049+ 9425000048+ 7434000048+
5782000048+ 4435000048+ 3356000048+ 2506000048+ 1847000048+ 1343000048+ 9640000047+ 6830000047+
4780000047+ 3310000047+ 2260000047+ 1520000047+ 1020000047+ 6700000046+ 4400000046+ 2800000046+
1800000046+ 1100000046+ 7000000045+ 4000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          56          56                14000198


          1000000045+ 2000000045+ 4000000045+ 8000000045+ 1700000046+ 3100000046+ 5800000046+
1030000047+ 1780000047+ 2980000047+ 4860000047+ 7690000047+ 1185000048+ 1778000048+ 2599000048+
3703000048+ 5148000048+ 6987000048+ 9262000048+ 1199800049+ 1519700049+ 1883200049+ 2283800049+
2712100049+ 3154800049+ 3596500049+ 4019600049+ 4406100049+ 4738700049+ 5001900049+ 5183800049+
5276400049+ 5276400049+ 5185400049+ 5009700049+ 4759200049+ 4447100049+ 4088500049+ 3699100049+
3294500049+ 2889000049+ 2495100049+ 2122700049+ 1779300049+ 1469800049+ 1196900049+ 9609000048+
7607000048+ 5940000048+ 4575000048+ 3477000048+ 2608000048+ 1930000048+ 1411000048+ 1018000048+
7250000047+ 5100000047+ 3550000047+ 2440000047+ 1650000047+ 1110000047+ 7300000046+ 4800000046+
3100000046+ 2000000046+ 1300000046+ 8000000045+ 5000000045+ 3000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          57          57                19000197                                199


                                  1000000045+ 2000000045+ 4000000045+ 7000000045+ 1400000046+
2600000046+ 4800000046+ 8500000046+ 1460000047+ 2430000047+ 3940000047+ 6220000047+ 9560000047+
1435000048+ 2099000048+ 2999000048+ 4185000048+ 5707000048+ 7609000048+ 9925000048+ 1267000049+
1583700049+ 1939300049+ 2327100049+ 2737800049+ 3159000049+ 3576200049+ 3973600049+ 4334800049+
4644400049+ 4888900049+ 5057500049+ 5143200049+ 5143200049+ 5058900049+ 4895700049+ 4662500049+
4371100049+ 4034900049+ 3668100049+ 3284900049+ 2898400049+ 2520300049+ 2160300049+ 1825600049+
1521300049+ 1250400049+ 1013800049+ 8111000048+ 6403000048+ 4990000048+ 3838000048+ 2915000048+
2186000048+ 1619000048+ 1185000048+ 8570000047+ 6120000047+ 4320000047+ 3010000047+ 2080000047+
1420000047+ 9600000046+ 6400000046+ 4200000046+ 2700000046+ 1800000046+ 1100000046+ 7000000045+
4000000045+ 3000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          60          60                20000197                    15000198


                                                                  1000000045+ 2000000045+ 3000000045+
6000000045+ 1200000046+ 2200000046+ 4000000046+ 7000000046+ 1190000047+ 1980000047+ 3190000047+
5030000047+ 7730000047+ 1159000048+ 1698000048+ 2431000048+ 3404000048+ 4662000048+ 6249000048+
8201000048+ 1054500049+ 1328600049+ 1641200049+ 1988400049+ 2363600049+ 2757500049+ 3158600049+
3553400049+ 3927500049+ 4266100049+ 4555300049+ 4783100049+ 4939900049+ 5019600049+ 5019600049+
4941100049+ 4789100049+ 4571400049+ 4298500049+ 3982400049+ 3636100049+ 3272500049+ 2903800049+
2540800049+ 2192700049+ 1866800049+ 1568100049+ 1299900049+ 1063500049+ 8590000048+ 6850000048+
5395000048+ 4196000048+ 3224000048+ 2447000048+ 1835000048+ 1360000048+ 9960000047+ 7220000047+
5170000047+ 3660000047+ 2560000047+ 1770000047+ 1210000047+ 8200000046+ 5500000046+ 3700000046+
2400000046+ 1600000046+ 1000000046+ 6000000045+ 4000000045+ 3000000045+ 2000000045+ 1000000045+
1000000045+
      1000-          63          63                21000197                                199


                                                                  1000000045+ 2000000045+
4000000045+ 7000000045+ 1400000046+ 2600000046+ 4500000046+ 7900000046+ 1320000047+ 2170000047+
3470000047+ 5420000047+ 8260000047+ 1230000048+ 1788000048+ 2544000048+ 3539000048+ 4819000048+
6425000048+ 8392000048+ 1074200049+ 1348000049+ 1659100049+ 2003400049+ 2374400049+ 2762900049+
3157600049+ 3545400049+ 3912200049+ 4243700049+ 4526600049+ 4749300049+ 4902500049+ 4980300049+
4980300049+ 4903700049+ 4755100049+ 4542200049+ 4275000049+ 3965200049+ 3625300049+ 3267900049+
2904800049+ 2546700049+ 2202500049+ 1879500049+ 1582700049+ 1315500049+ 1079400049+ 8744000048+
6996000048+ 5527000048+ 4314000048+ 3326000048+ 2534000048+ 1908000048+ 1420000048+ 1045000048+
7600000047+ 5460000047+ 3890000047+ 2730000047+ 1900000047+ 1310000047+ 8900000046+ 6000000046+
4000000046+ 2600000046+ 1700000046+ 1100000046+ 7000000045+ 5000000045+ 3000000045+ 2000000045+
1000000045+ 1000000045+
      1000-          64          64                16000198


                                                                                          1000000045+
1000000045+ 3000000045+ 5000000045+ 1000000046+ 1900000046+ 3300000046+ 5800000046+ 9800000046+
1610000047+ 2590000047+ 4070000047+ 6250000047+ 9370000047+ 1375000048+ 1972000048+ 2770000048+
3809000048+ 5130000048+ 6772000048+ 8763000048+ 1112200049+ 1385100049+ 1692900049+ 2031400049+
2394200049+ 2772200049+ 3154600049+ 3528800049+ 3881700049+ 4199900049+ 4470900049+ 4683800049+
4830100049+ 4904400049+ 4904400049+ 4831200049+ 4689100049+ 4485300049+ 4229000049+ 3931200049+
3603600049+ 3258000049+ 2905800049+ 2557100049+ 2220600049+ 1903400049+ 1610600049+ 1345500049+
1110100049+ 9045000048+ 7280000048+ 5789000048+ 4549000048+ 3532000048+ 2710000048+ 2056000048+
1542000048+ 1144000048+ 8390000047+ 6080000047+ 4360000047+ 3100000047+ 2170000047+ 1510000047+
1040000047+ 7100000046+ 4800000046+ 3200000046+ 2100000046+ 1400000046+ 9000000045+ 6000000045+
4000000045+ 2000000045+ 1000000045+ 1000000045+ 1000000045+
      1000-          66          66                22000197                                199
```

```
                1000000045+ 2000000045+ 4000000045+ 7000000045+ 14000000046+ 24000000046+ 42000000046+
72000000046+ 119000000047+ 193000000047+ 305000000047+ 472000000047+ 713000000047+ 1054000000048+ 1525000000048+
216000000048+ 299800000048+ 407700000048+ 543600000048+ 710900000048+ 912100000048+ 1148500000049+ 1420000000049+
172430000049+ 205700000049+ 241170000049+ 277960000049+ 315020000049+ 351170000049+ 385150000049+ 415720000049+
441700000049+ 462090000049+ 476090000049+ 483200000049+ 483200000049+ 476190000049+ 462590000049+ 443040000049+
418430000049+ 389770000049+ 358170000049+ 324740000049+ 290550000049+ 256590000049+ 223700000049+ 192550000049+
163670000049+ 137400000049+ 113940000049+ 933500000048+ 755700000048+ 604500000048+ 478000000048+ 373600000048+
288700000048+ 220600000048+ 166700000048+ 124500000048+ 92100000047+ 673000000047+ 487000000047+ 349000000047+
247300000047+ 173000000047+ 120000000047+ 82000000046+ 56000000046+ 38000000046+ 25000000046+ 17000000046+
110000000046+ 70000000045+ 50000000045+ 30000000045+ 20000000045+ 10000000045+ 10000000045+
      1000-          68          68                  17000198

                1000000045+ 1000000045+ 2000000045+ 5000000045+ 9000000045+ 16000000046+ 27000000046+
470000000046+ 800000000046+ 131000000047+ 210000000047+ 330000000047+ 506000000047+ 759000000047+ 111400000048+
160200000048+ 225500000048+ 311200000048+ 421100000048+ 558700000048+ 727400000048+ 929400000048+ 116600000049+
143670000049+ 173910000049+ 206900000049+ 241970000049+ 278260000049+ 314750000049+ 350290000049+ 383650000049+
413620000049+ 439080000049+ 459040000049+ 472740000049+ 479690000049+ 479690000049+ 472840000049+ 459520000049+
440370000049+ 416240000049+ 388120000049+ 357070000049+ 324130000049+ 290500000049+ 256980000049+ 224450000049+
193590000049+ 164910000049+ 138760000049+ 115360000049+ 94760000048+ 76920000048+ 61720000048+ 48950000048+
383800000048+ 297500000048+ 228100000048+ 173000000048+ 129700000047+ 96200000047+ 70700000047+ 51300000047+
369000000047+ 262000000047+ 185000000047+ 129000000047+ 89000000046+ 61000000046+ 41000000046+ 28000000046+
180000000046+ 120000000046+ 80000000045+ 50000000045+ 30000000045+ 20000000045+ 10000000045+ 10000000045+
      1000-          69          69                  23000197                                      199

                                                1000000045+ 1000000045+ 2000000045+ 4000000045+ 7000000045+
130000000046+ 230000000046+ 390000000046+ 650000000046+ 107000000047+ 171000000047+ 268000000047+ 410000000047+
615000000047+ 904000000047+ 130100000048+ 183700000048+ 254400000048+ 345500000048+ 460700000048+ 603100000048+
775400000048+ 979500000048+ 121590000049+ 148390000049+ 178060000049+ 210170000049+ 244070000049+ 278940000049+
313810000049+ 347600000049+ 379200000049+ 407500000049+ 431470000049+ 450230000049+ 463090000049+ 469610000049+
469610000049+ 463180000049+ 450660000049+ 432640000049+ 409870000049+ 383250000049+ 353770000049+ 322420000049+
290180000049+ 257940000049+ 226480000049+ 196470000049+ 168470000049+ 142900000049+ 120000000048+ 99830000048+
808600000048+ 654200000048+ 523300000048+ 414100000048+ 324100000048+ 250900000048+ 192200000048+ 145600000048+
109200000048+ 811000000047+ 596000000047+ 433000000047+ 312000000047+ 222000000047+ 157000000047+ 110000000047+
760000000046+ 520000000046+ 350000000046+ 240000000046+ 160000000046+ 100000000046+ 70000000045+ 40000000045+
300000000045+ 200000000045+ 100000000045+ 100000000045+
      1000-          72          72                  24000197                                      18000198

                                                                                1000000045+ 1000000045+
200000000045+ 400000000045+ 700000000045+ 120000000046+ 210000000046+ 360000000046+ 590000000046+ 950000000046+
151000000047+ 234000000047+ 356000000047+ 530000000047+ 775000000047+ 111100000048+ 156400000048+ 216100000048+
293300000048+ 391100000048+ 512400000048+ 660100000048+ 836100000048+ 104170000049+ 127690000049+ 154040000049+
182920000049+ 213880000049+ 246290000049+ 279370000049+ 312240000049+ 343910000049+ 373390000049+ 399690000049+
421890000049+ 439230000049+ 451100000049+ 457120000049+ 457120000049+ 451180000049+ 439610000049+ 422920000049+
401770000049+ 376970000049+ 349390000049+ 319920000049+ 289450000049+ 258880000049+ 228710000049+ 199790000049+
172550000049+ 147350000049+ 124220000049+ 103920000049+ 858400000048+ 703500000048+ 567200000048+ 453700000048+
359200000048+ 281400000048+ 218300000048+ 167600000048+ 127300000048+ 958000000047+ 714000000047+ 527000000047+
385000000047+ 279000000047+ 200000000047+ 142000000047+ 100000000047+ 700000000046+ 480000000046+ 330000000046+
220000000046+ 150000000046+ 100000000046+ 70000000045+ 40000000045+ 30000000045+ 20000000045+ 10000000045+
100000000045+
      1000-          76          76                  19000198

                1000000045+ 1000000045+ 2000000045+ 4000000045+ 7000000045+ 11000000046+ 19000000046+
320000000046+ 530000000046+ 850000000046+ 133000000047+ 204000000047+ 309000000047+ 457000000047+ 665000000047+
950000000047+ 133300000048+ 183900000048+ 249300000048+ 332400000048+ 435900000048+ 562500000048+ 714300000048+
892900000048+ 109890000049+ 133200000049+ 159050000049+ 187110000049+ 216940000049+ 247930000049+ 279360000049+
310400000049+ 340170000049+ 367750000049+ 392260000049+ 412910000049+ 429000000049+ 440000000049+ 445570000049+
445570000049+ 440070000049+ 429330000049+ 413810000049+ 394110000049+ 370930000049+ 345050000049+ 317290000049+
288440000049+ 259270000049+ 230460000049+ 202610000049+ 176180000049+ 151550000049+ 128900000049+ 108620000049+
905100000048+ 746500000048+ 609400000048+ 492400000048+ 393900000048+ 312000000048+ 244700000048+ 190100000048+
146200000048+ 111400000048+ 841000000047+ 629000000047+ 466000000047+ 342000000047+ 249000000047+ 179000000047+
128000000047+ 910000000046+ 640000000046+ 440000000046+ 300000000046+ 210000000046+ 140000000046+ 100000000046+
600000000045+ 400000000045+ 300000000045+ 200000000045+ 100000000045+
      1000-          80          80                  20000198

                                                1000000045+ 1000000045+ 2000000045+ 4000000045+
600000000045+ 110000000046+ 180000000046+ 290000000046+ 470000000046+ 750000000046+ 117000000047+ 178000000047+
267000000047+ 394000000047+ 571000000047+ 812000000047+ 113700000048+ 156600000048+ 212200000048+ 282900000048+
371300000048+ 479800000048+ 610700000048+ 765600000048+ 945800000048+ 1151400000049+ 1381700000049+ 1634700000049+
190710000049+ 219450000049+ 249100000049+ 279000000049+ 308360000049+ 336400000049+ 362270000049+ 385200000049+
404460000049+ 419440000049+ 429670000049+ 434850000049+ 434850000049+ 429730000049+ 419740000049+ 405270000049+
386850000049+ 365110000049+ 340770000049+ 314560000049+ 287210000049+ 259410000049+ 231810000049+ 204970000049+
179350000049+ 155310000049+ 133130000049+ 112960000049+ 948800000048+ 789100000048+ 649900000048+ 530000000048+
428100000048+ 342500000048+ 271400000048+ 213000000048+ 165700000048+ 127700000048+ 97500000047+ 73800000047+
553000000047+ 411000000047+ 303000000047+ 221000000047+ 160000000047+ 115000000047+ 82000000046+ 58000000046+
400000000046+ 280000000046+ 190000000046+ 130000000046+ 90000000045+ 60000000045+ 40000000045+ 30000000045+
200000000045+ 100000000045+ 100000000045+
      1000-          84          84                  21000198

                                                                                1000000045+
100000000045+ 200000000045+ 300000000045+ 600000000045+ 100000000046+ 160000000046+ 260000000046+ 420000000046+
660000000046+ 102000000047+ 155000000047+ 231000000047+ 340000000047+ 490000000047+ 695000000047+ 971000000047+
135500000048+ 180800000048+ 241000000048+ 316600000048+ 409700000048+ 522500000048+ 656900000048+ 814100000048+
995000000048+ 119950000049+ 142640000049+ 167370000049+ 193800000049+ 221480000049+ 249870000049+ 278340000049+
306180000049+ 332600000049+ 356900000049+ 378400000049+ 396500000049+ 410700000049+ 420400000049+ 424870000049+
424870000049+ 420100000049+ 410760000049+ 397220000049+ 379950000049+ 359520000049+ 336500000049+ 311770000049+
285790000049+ 259280000049+ 232820000049+ 206970000049+ 182120000049+ 158630000049+ 136980000049+ 117660000049+
100000000048+ 845000000048+ 710000000048+ 595000000048+ 496000000048+ 412000000048+ 341000000048+ 282000000048+
232000000048+ 191000000048+ 157000000048+ 129000000048+ 106000000048+ 870000000047+ 710000000047+ 580000000047+
470000000047+ 380000000047+ 310000000047+ 250000000047+ 200000000047+ 160000000047+ 130000000047+ 100000000047+
800000000046+ 600000000046+ 400000000046+ 300000000046+ 200000000046+ 100000000046+ 100000000046+ 100000000046+
```

```
9897000048+ 8294000048+ 6886000048+ 5663000048+ 4614000048+ 3725000048+ 2930000048+ 2363000048+
1856000048+ 1446000048+ 1116000048+ 8540000047+ 6480000047+ 4870000047+ 3630000047+ 2690000047+
1970000047+ 1430000047+ 1030000047+ 7400000046+ 5200000046+ 3700000046+ 2600000046+ 1800000046+
1200000046+ 8000000045+ 6000000045+ 4000000045+ 3000000045+ 2000000045+ 1000000045+ 1000000045+
1000000045+
      1000-          88           88                 22000198


                      1000000045+ 1000000045+ 2000000045+ 3000000045+ 5000000045+ 9000000045+
1500000046+ 2400000046+ 3700000046+ 5800000046+ 9000000046+ 1350000047+ 2000000047+ 2930000047+
4210000047+ 5930000047+ 8300000047+ 1140000048+ 1542000048+ 2056000048+ 2702000048+ 3501000048+
4473000048+ 5638000048+ 7009000048+ 8598000048+ 1040800049+ 1243500049+ 1466700049+ 1708100049+
1964300049+ 2231000049+ 2503100049+ 2774600049+ 3038800049+ 3289000049+ 3518500049+ 3720700049+
3889000049+ 4021000049+ 4110300049+ 4155500049+ 4155500049+ 4110800049+ 4023300049+ 3896300049+
3733900049+ 3541500049+ 3324700049+ 3089600049+ 2842400049+ 2589100049+ 2335300049+ 2085900049+
1845200049+ 1616800049+ 1403200049+ 1206500049+ 1027800049+ 8675000048+ 7255000048+ 6013000048+
4940000048+ 4022000048+ 3245000048+ 2596000048+ 2059000048+ 1619000048+ 1262000048+ 9760000047+
7480000047+ 5690000047+ 4290000047+ 3210000047+ 2380000047+ 1750000047+ 1280000047+ 9300000046+
6700000046+ 4800000046+ 3400000046+ 2400000046+ 1600000046+ 1100000046+ 8000000045+ 5000000045+
4000000045+ 2000000045+ 2000000045+ 1000000045+ 1000000045+
      1000-          92           92                 23000198


                                                                  1000000045+ 1000000045+ 2000000045+
3000000045+ 5000000045+ 8000000045+ 1300000046+ 2100000046+ 3300000046+ 5100000046+ 7800000046+
1170000047+ 1730000047+ 2520000047+ 3610000047+ 5100000047+ 7100000047+ 9730000047+ 1316000048+
1755000048+ 2308000048+ 2994000048+ 3832000048+ 4845000048+ 6035000048+ 7428000048+ 9027000048+
1083200049+ 1283800049+ 1502900049+ 1738400049+ 1988700049+ 2245800049+ 2504700049+ 2763800049+
3015100049+ 3252200049+ 3469300049+ 3659600049+ 3818700049+ 3941900049+ 4025800049+ 4068.00049+
4068200049+ 4026200049+ 3944000049+ 3824500049+ 3671900049+ 3489800049+ 3284500049+ 3061300049+
2825800049+ 2583600049+ 2339900049+ 2099300049+ 1868100049+ 1643500049+ 1434300049+ 1240500049+
1063300049+ 9033000048+ 7607000048+ 6350000048+ 5251[illegible]+ 4312000048+ 3508000048+ 2830000048+
2264000048+ 1796000048+ 1413000048+ 1103000048+ 8459[illegible]+ 6560000047+ 5000000047+ 3780000047+
2830000047+ 2110000047+ 1560000047+ 1140000047+ [illegible]+ [illegible]+ 4300000046+ 3100000046+
2200000046+ 1500000046+ 1100000046+ 7000000045+ 5000000045+ 3000000045+ 2000000045+ 2000000045+
1000000045+ 1000000045+
      1000-          96           96                 24000198
6666666666
      1000-                                          25000195
```

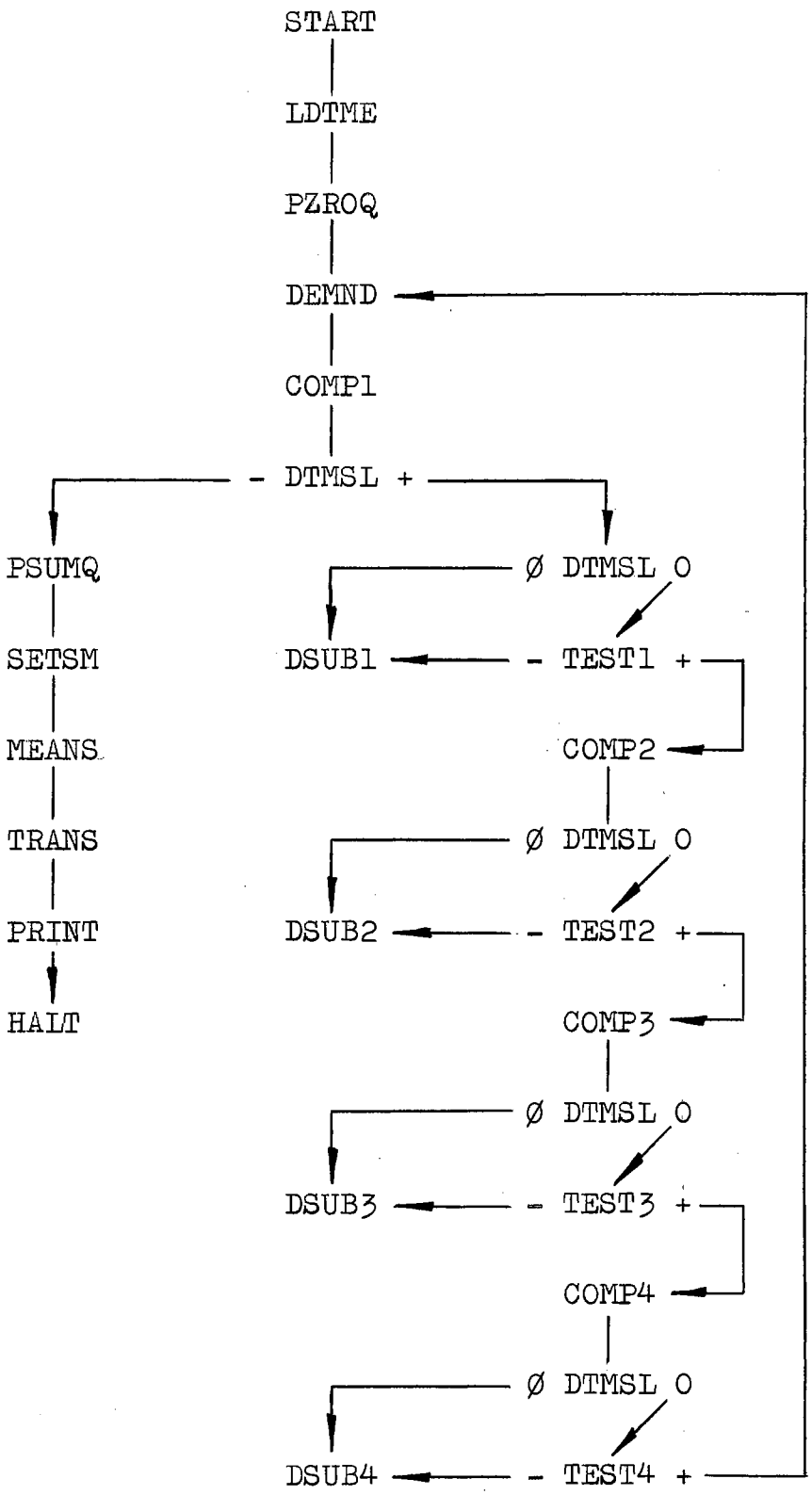
LOGNORMAL LEAD TIME DISTRIBUTIONS

```
                                                    1000000051

          6666666666-
      2000- 4000000051
                        2250000046+ 12300200050+ 7238215050+ 1503165050+ 2825000048+ 12500000046+

          6666666666-
      2000- 4032957051  5000000049
            10500000046+ 2061500049+ 2603655050+ 4145085050+ 2211680050+ 6586000049+ 1430550049+
26365000048+ 44450000047+ 72000000046+

          6666666666-
      2000- 4107322051  1000000051
                                                            1000000051

          6666666666-
      2000- 5000000051
                                  9740000047+ 1790955050+ 6160670050+ 1925300050+ 1111950049+
21200000047+

          6666666666-
      2000- 5034351551  5000000049
            10000000044+ 13059000048+ 5938500049+ 2629290050+ 3369065050+ 2121220050+ 8823250049+
28507500049+ 7960000048+ 20150000048+ 4875000047+ 1145000047+ 2650000046+

          6666666666-
      2000- 5134305951  1000000050
                                                                        1000000051

          6666666666-
      2000- 6000000051
                                  1500000045+ 6226000048+ 2186570050+ 5316505050+ 2171535050+
25068500049+ 1210000048+ 3250000046+

          6666666666-
      2000- 6039934051  5000000049
                        72000000046+ 9544000048+ 96216500049+ 2469200050+ 2831770050+ 1978230050+
10110750050+ 42173000049+ 15417500049+ 51855000048+ 16475000048+ 5025000047+ 1505000047+ 4450000046+

          6666666666-
      2000- 6160774551  1000000050
                                                                                    1000000051

          6666666666-
      2000- 7000000051
                                                  6200000046+ 1802350049+ 2417995050+ 4656285050+
22858850050+ 41909000049+ 3775000048+ 2060000047+

          6666666666-
      2000- 7046467051  5000000049
                        40000000045+ 13020000048+ 26186000049+ 1200580050+ 2262520050+ 2439570050+
18268250050+ 10713850050+ 53301000049+ 23577000049+ 96410000048+ 37285000048+ 13915000048+ 50300000047+
18000000047+ 63500000046+ 22500000046+ 75000000045+
          6666666666-
      2000- 7187918051  1000000050

1000000051

          6666666666-
      2000- 8000000051
                                                  3000000044+ 5667000047+ 3504850049+ 2519195050+
41322900050+ 23151750050+ 58630000049+ 82775000048+ 75800000047+ 50500000046+

          6666666666-
      2000- 8053156751  5000000049
                        20000000044+ 16530000047+ 60620000048+ 4564100049+ 1317130050+ 2060420050+
21421700050+ 16841650050+ 10894150050+ 61288500049+ 31201500049+ 14768000049+ 6646000048+ 28580000048+
12060000048+ 49550000047+ 20200000047+ 81500000046+ 32500000046+
          6666666666-
      2000- 8214464351  1000000050
```

APPENDIX B-2

QSUBX AND SSUBM PROGRAM

QSUBX AND SSUBM PROGRAM DIAGRAM



QSUBX AND SSUBM PROGRAM

```
 1                                          BLR   0000      0150
 2                                          BLR   0190      0200
 3                                          BLR   0400      1999
 4                                          SYN   START     0301
 5  0301   88 0000 0157          START      RAC   0000      LDTME
 6  0157   82 0000 0163          LDTME      RAB   0000
 7  0163   80 0000 0169                     RAA   0000      NXTCD
 8  0169   70 9030 0219          NXTCD      RCD   9030
 9  0219   65 9030 0177                     RAL   9030
10  0177   46 0180 0181                     BMI   PZROQ     LSUBX
11  0181   69 9230 0187          LSUBX      LDD   9030 A
12  0187   24 9400 0243                     STD   9000 B
13  0243   50 0001 0249                     AXA   0001
14  0249   52 0001 0155                     AXB   0001
15  0155   51 0008 0161                     SXA   0008
16  0161   40 0164 0169                     NZA   NXTWD     NXTCD
17  0164   50 0008 0181          NXTWD      AXA   0008      LSUBX
18  0180   69 9000 0186          PZROQ      LDD   9000
19  0186   24 0400 0153                     STD   0400
20  0153   24 0800 0203                     STD   0800
21  0203   24 1200 0253                     STD   1200
22  0253   24 1600 0303                     STD   1600      DEMND
23  0303   82 0000 0159          DEMND      RAB   0000
24  0159   80 0000 0165                     RAA   0000      CDNXT
25  0165   70 9040 0215          CDNXT      RCD   9040
26  0215   65 9040 0173                     RAL   9040
27  0173   46 0176 0227                     BMI   COMP1     DSUBX
28  0227   69 9240 0183          DSUBX      LDD   9040 A
29  0183   24 4000 0353                     STD   0000 B
30  0353   50 0001 0209                     AXA   0001
31  0209   52 0001 0265                     AXB   0001
32  0265   51 0008 0171                     SXA   0008
33  0171   40 0174 0165                     NZA   WDNXT     CDNXT
34  0174   50 0008 0227          WDNXT      AXA   0008      DSUBX
35  0176   80 0000 0182          COMP1      RAA   0000
36  0182   65 9044 0189                     RAL   9044
37  0189   35 0004 0299                     SLT   0004
38  0299   88 8003 0158                     RAC   8003
39  0158   60 9044 0315                     RAU   9044
40  0315   35 0004 0175                     SLT   0004
41  0175   30 0004 8003                     SRT   0004      8003
42  0195   60 9600 0154            195      RAU   9000 C
43  0154   39 2000 0250                     FMP   0000 A
44  0250   46 0204 0254                     BMI   PSUMQ
45  0254   45 0208 0259                     NZE             TEST1
46  0208   21 0162 0365                     STU   DTMSL     DSUB1
47  0259   21 0162 0166          TEST1      STU   DTMSL
48  0166   65 8005 0223                     RAL   8005
49  0223   16 9041 0231                     SLO   9041
50  0231   46 0365 0185                     BMI   DSUB1     COMP2
51  0365   60 2400 0205          DSUB1      RAU   0400 A
```

```
 52 0205   32 0162 0239            FAD   DTMSL
 53 0239   21 2400 0304            STU    0400 A
 54 0304   50 0001 0195            AXA    0001      0195
 55 0185   80 0000 0241   COMP2    RAA    0000
 56 0241   65 9045 0349            RAL    9045
 57 0349   35 0004 0309            SLT    0004
 58 0309   88 8003 0168            RAC    8003
 59 0168   60 9045 0225            RAU    9045
 60 0225   35 0004 0235            SLT    0004
 61 0235   30 0004 8003            SRT    0004      8003
 62 0196   60 9600 0354     196    RAU    9000 C
 63 0354   39 2000 0300            FMP    0000 A
 64 0300   45 0255 0305            NZE               TEST2
 65 0255   21 0162 0216            STU    DTMSL      DSUB2
 66 0305   21 0162 0266   TEST2    STU    DTMSL
 67 0266   65 8005 0273            RAL    8005
 68 0273   16 9041 0281            SLO    9041
 69 0281   46 0216 0285            BMI    DSUB2      COMP3
 70 0216   60 2800 0355   DSUB2    RAU    0800 A
 71 0355   32 0162 0289            FAD    DTMSL
 72 0289   21 2800 0156            STU    0800 A
 73 0156   50 0001 0196            AXA    0001      0196
 74 0285   80 0000 0291   COMP3    RAA    0000
 75 0291   65 9046 0399            RAL    9046
 76 0399   35 0004 0359            SLT    0004
 77 0359   88 8003 0218            RAC    8003
 78 0218   60 9046 0275            RAU    9046
 79 0275   35 0004 0335            SLT    0004
 80 0335   30 0004 8003            SRT    0004      8003
 81 0197   60 9600 0206     197    RAU    9000 C
 82 0206   39 2000 0350            FMP    0000 A
 83 0350   45 0256 0306            NZE               TEST3
 84 0256   21 0162 0316            STU    DTMSL      DSUB3
 85 0306   21 0162 0366   TEST3    STU    DTMSL
 86 0366   65 8005 0323            RAL    8005
 87 0323   16 9041 0331            SLO    9041
 88 0331   46 0316 0385            BMI    DSUB3      COMP4
 89 0316   60 3200 0356   DSUB3    RAU    1200 A
 90 0356   32 0162 0339            FAD    DTMSL
 91 0339   21 3200 0207            STU    1200 A
 92 0207   50 0001 0197            AXA    0001      0197
 93 0385   80 0000 0341   COMP4    RAA    0000
 94 0341   65 9047 0151            RAL    9047
 95 0151   35 0004 0211            SLT    0004
 96 0211   88 8003 0170            RAC    8003
 97 0170   60 9047 0277            RAU    9047
 98 0277   35 0004 0237            SLT    0004
 99 0237   30 0004 8003            SRT    0004      8003
100 0198   60 9600 0257     198    RAU    9000 C
101 0257   39 2000 0201            FMP    0000 A
102 0201   45 0307 0357            NZE               TEST4
103 0307   21 0162 0167            STU    DTMSL      DSUB4
104 0357   21 0162 0217   TEST4    STU    DTMSL
105 0217   65 8005 0325            RAL    8005
```

```
106 0325   16 9041 0233            SLO   9041
107 0233   46 0167 0199            BMI   DSUB4     0199
108 0167   60 3600 0258   DSUB4    RAU   1600 A
109 0258   32 0162 0389            FAD   DTMSL
110 0389   21 3600 0308            STU   1600 A
111 0308   50 0001 0198            AXA   0001      0198
112 0199   00 0000 0303     199    NOP   0000      DEMND
113 0204   80 0000 0160   PSUMQ    RAA   0000      NEXTP
114 0160   60 2400 0358   NEXTP    RAU   0400 A
115 0358   32 0261 0287            FAD   SUM1
116 0287   21 0261 0214            STU   SUM1
117 0214   60 2800 0210            RAU   0800 A
118 0210   32 0213 0240            FAD   SUM2
119 0240   21 0213 0267            STU   SUM2
120 0267   60 3200 0260            RAU   1200 A
121 0260   32 0263 0290            FAD   SUM3
122 0290   21 0263 0317            STU   SUM3
123 0317   60 3600 0310            RAU   1600 A
124 0310   32 0313 0340            FAD   SUM4
125 0340   21 0313 0367            STU   SUM4
126 0367   50 0001 0373            AXA   0001
127 0373   51 0148 0179            SXA   0148
128 0179   40 0232 0283            NZA               SETSM
129 0232   50 0148 0160            AXA   0148        NEXTP
130 0283   69 0261 0264   SETSM    LDD   SUM1
131 0264   24 0550 0360            STD   0550
132 0360   69 0213 0268            LDD   SUM2
133 0268   24 0950 0311            STD   0950
134 0311   69 0263 0318            LDD   SUM3
135 0318   24 1350 0361            STD   1350
136 0361   69 0313 0368            LDD   SUM4
137 0368   24 1750 0212            STD   1750        MEANS
138 0212   88 0000 0269   MEANS    RAC   0000        NEXTD
139 0269   82 0000 0375   NEXTD    RAB   0000
140 0375   52 6000 0282            AXB   6000        SSUBM
141 0282   80 0000 0188   SSUBM    RAA   0000
142 0188   50 4000 0245            AXA   4000        NEXTQ
143 0245   60 2400 0262   NEXTQ    RAU   0400 A
144 0262   45 0319 0369            NZE               MINUS
145 0319   39 9033 0172            FMP   9033        ADSUM
146 0369   60 0222 0327   MINUS    RAU   PLUS1
147 0327   69 2400 0312            LDD   0400 A
148 0312   19 8001 0236            MPY   8001
149 0236   46 0390 0172            BMI   SETUP       ADSUM
150 0172   32 4600 0377   ADSUM    FAD   0600 B
151 0377   21 4600 0362            STU   0600 B
152 0362   60 9033 0220            RAU   9033
153 0220   32 9034 0251            FAD   9034
154 0251   21 9033 0363            STU   9033
155 0363   50 0001 0245            AXA   0001        NEXTQ
156 0390   60 4600 0314   SETUP    RAU   0600 B
157 0314   45 0270 0320            NZE               NEXTS
158 0270   34 6550 0351            FDV   0550 C
159 0351   21 4600 0364            STU   0600 B
```

```
160 0364   69 9043 0370          LDD   9043
161 0370   24 9033 0226          STD   9033
162 0226   52 0001 0282          AXB   0001     SSUBM
163 0320   69 9043 0276  NEXTS   LDD   9043
164 0276   24 9033 0332          STD   9033
165 0332   58 0400 0238          AXC   0400
166 0238   59 1600 0244          SXC   1600
167 0244   48 0247 0248          NZC            TRANS
168 0247   58 1600 0269          AXC   1600     NEXTD
169 0248   80 0000 0221  TRANS   RAA   0000     NEXTT
170 0221   69 2400 0271  NEXTT   LDD   0400 A
171 0271   24 9052 0178          STD   9052
172 0178   69 2600 0321          LDD   0600 A
173 0321   24 9053 0228          STD   9053
174 0228   69 2800 0371          LDD   0800 A
175 0371   24 9054 0278          STD   9054
176 0278   69 3000 0272          LDD   1000 A
177 0272   24 9055 0328          STD   9055
178 0328   69 3200 0322          LDD   1200 A
179 0322   24 9056 0378          STD   9056
180 0378   69 3400 0372          LDD   1400 A
181 0372   24 9057 0229          STD   9057
182 0229   69 3600 0224          LDD   1600 A
183 0224   24 9058 0230          STD   9058
184 0230   60 3800 0274          RAU   1800 A
185 0274   45 0279 0329          NZE            TOTAL
186 0279   24 9059 0286          STD   9059     SETPL
187 0286   69 9033 0242  SETPL   LDD   9033
188 0242   24 9050 0298          STD   9050
189 0298   71 9052 0348          WR1   9052     PRINT
190 0348   74 9050 0398  PRINT   WR2   9050
191 0398   60 9033 0324          RAU   9033
192 0324   32 9034 0374          FAD   9034
193 0374   21 9033 0381          STU   9033
194 0381   50 0001 0221          AXA   0001     NEXTT
195 0329   24 9059 0336  TOTAL   STD   9059
196 0336   69 9033 0292          LDD   9033
197 0292   24 9050 0152          STD   9050
198 0152   71 9052 0202          WR1   9052
199 0202   74 9050 0252          WR2   9050
200 0252   69 0261 0326          LDD   SUM1
201 0326   24 9052 0382          STD   9052
202 0382   69 0213 0376          LDD   SUM2
203 0376   24 9054 0333          STD   9054
204 0333   69 0263 0379          LDD   SUM3
205 0379   24 9056 0386          STD   9056
206 0386   69 0313 0280          LDD   SUM4
207 0280   24 9058 0337          STD   9058
208 0337   74 9050 0387          WR2   9050
209 0387   01 0000 8000          HLT   0000      8000
210 0222   00 0000 0001  PLUS1    00   0000      0001
```

APPENDIX B-3

OUTPUT DISTRIBUTIONS

OUTPUT DISTRIBUTIONS

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 4.00, V(LSUBX) = 0.00

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	1831600049+	3999992051+	3350000047+	8000015051+	6000000045+	1199998552+		1600001852+
1+	7326300049+	3018308051+	2684000048+	7000350051+	7400000046+	1099999152+	2000000045+	1500001852+
2+	1465250050+	2109887051+	1073500049+	6003369051+	4420000047+	1000007152+	1400000046+	1400002052+
3+	1953670050+	1347991051+	2862600049+	5017123051+	1770000048+	9000593051+	7700000046+	1300003652+
4+	1953670050+	7814620050+	5725200049+	4059502951+	5309000048+	8002885051+	3070000047+	1200012952+
5+	1562930050+	4103000050+	9160400049+	3159134751+	1274100049+	7010486051+	9830000047+	1100052952+
6+	1041960050+	1954310050+	1221380050+	2350370351+	2548100049+	6030828051+	2622000048+	1000191252+
7+	5954000049+	8475800049+	1395870050+	1663743751+	4368200049+	5076651151+	5994000048+	9005917051+
8+	2977000049+	3362500049+	1395870050+	1116703851+	6552300049+	4166156251+	1198700049+	8015916051+
9+	1323100049+	1226200049+	1240770050+	7092505850+	8736400049+	3321184351+	2131100049+	7037902051+
10+	5292000048+	4130000048+	9926200049+	4258741550+	1048370050+	2563576651+	3409800049+	6081199051+
11+	1925000048+	1290000048+	7219000049+	2417595250+	1143680050+	1910805951+	4959700049+	5158594051+
12+	7140000047+	3750000047+	4812700049+	1298347450+	1143680050+	1372403451+	6612900049+	4285586051+
13+	2550000047+	1020000047+	2961600049+	6603686849+	1055700050+	9483689550+	8138900049+	3478707051+
14+	9282000046+	2600000046+	1692400049+	3185493649+	9048900049+	6299046350+	9301600049+	2753217051+
15+	3315000046+	6000000045+	9026000048+	1459697149+	7239100049+	4019294050+	9921800049+	2120743051+
16+	1184000045+	1000000045+	4513000048+	6364987348+	5429300049+	2463452550+	9921800049+	1587487051+
17+			2124000048+	2645994748+	3832500049+	1450541550+	9338100049+	1153449051+
18+			9440000047+	1050997948+	2555000049+	8208808249+	8306000049+	8127920050+
19+			3970000047+	3999920247+	1613700049+	4467204549+	6989900049+	5551410050+
20+			1590000047+	1459997147+	9682000048+	2339302349+	5592000049+	3673890050+
21+			6100000046+	5099989846+	5533000048+	1179601249+	4260500049+	2355570050+
22+			2200000046+	1699996646+	3018000048+	5732005748+	3098600049+	1463300050+
23+			8000000045+	4999990045+	1574000048+	2686002748+	2155500049+	8808900049+
24+			3000000045+	9999980044+	7870000047+	1214001248+	1437000049+	5140300049+
25+			1000000045+		3780000047+	5290005347+	9197000048+	2908700049+
26+					1740000047+	2220002247+	5660000048+	1596800049+
27+					7800000046+	8900008946+	3354000048+	8509000048+
28+					3300000046+	3400003446+	1916000048+	4404000048+
29+					1400000046+	1200001246+	1057000048+	2215000048+
30+					5000000045+	4000004045+	5640000047+	1083000048+
31+					2000000045+	1000001045+	2910000047+	5150000047+
32+					1000000045+		1460000047+	2380000047+
33+							7100000046+	1070000047+
34+							3300000046+	4700000046+
35+							1500000046+	2000000046+
36+							7000000045+	8000000045+
37+							3000000045+	3000000045+
38+							1000000045+	1000000045+
39+							1000000045+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 4.03, V(LSUBX) = 0.05

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	2040430849+	4032950651+	5545954747+	8065919951+	1952795346+	1209886452+	7455495044+	1613183952+
1+	7651338649+	3053354751+	3842247048+	7066474451+	1913042347+	1109888152+	1061018146+	1513184252+
2+	1464082450+	2150272451+	1360409249+	6070871451+	9408134247+	1009909252+	6474192346+	1413185652+
3+	1903257750+	1393598651+	3284304349+	5088872551+	3153360748+	9100243351+	2745428447+	1313193152+
4+	1888358750+	8272500550+	6076736449+	4139716051+	8092642048+	8104548051+	8786262547+	1213228352+
5+	1523609350+	4497376850+	9178837649+	3251327351+	1698705749+	7116946051+	2289022048+	1113350952+
6+	1040553350+	2245861650+	1177157050+	2454726851+	3038097649+	6146330951+	5062358348+	1013703052+
7+	6184435349+	1034900450+	1316359450+	1775842051+	4759058249+	5206096151+	9793411848+	9145609651+
8+	3265044349+	4423825649+	1308486550+	1228592851+	6657005449+	4313452851+	1693610449+	8163983751+
9+	1555622849+	1763691649+	1173306050+	8121921850+	8433858949+	3487379151+	2661199649+	7199293451+
10+	6773353348+	6591806048+	9603153249+	5131220750+	9781919349+	2745644551+	3845436749+	6261215651+
11+	2723657648+	2320048448+	7244437049+	3100833650+	1047495650+	2101728851+	5156215649+	5361592551+
12+	1019795648+	7719488447+	5079218449+	1794889950+	1042916550+	1562563151+	6459163049+	4513531251+
13+	3576245047+	2436448847+	3333502549+	9968675749+	9712572149+	1127688951+	7598809849+	3730061151+
14+	1182351847+	7296540246+	2060899349+	5321950749+	8506438649+	7899405450+	8430625149+	3022579551+
15+	3713847946+	2052112846+	1206723849+	2736122649+	7040852649+	5372566850+	8852546849+	2399404051+
16+	1122244546+	5215334245+	6723866648+	1357017349+	5532872549+	3549814250+	8826077449+	1864754551+
17+	3169052545+	1131986545+	3579710148+	6502978348+	4145458349+	2280349650+	8380970249+	1418365351+
18+	7143410044+	2176915144+	1826850748+	3015490948+	2972913049+	1425431250+	7602646549+	1055786051+
19+	1852790044+	1773750143+	8959120247+	1354852248+	2048004349+	8678043449+	6607972949+	7692330050+
20+	1167500043+	3062500142+	4237793347+	5901245047+	1359519549+	5149781349+	5519690349+	5487597550+
21+	2950000042+	6250000340+	1937765147+	2491758147+	8720901748+	2981039949+	4443832049+	3834834550+
22+	3750000040+	1250000140+	8532943946+	1020034147+	5417660748+	1684389549+	3458122649+	2626454450+
23+	1250000040+		3678513946+	4016037146+	3265343948+	9295057748+	2607879349+	1763886550+
24+			1542169546+	1510244546+	1912870548+	5011566848+	1910601349+	1162106750+
25+			6181000045+	5466198545+	1090429948+	2640949048+	1362671649+	7513869549+
26+			2161269045+	2010946545+	6048675947+	1360762248+	9477847648+	4769349949+
27+			8300410044+	7169612844+	3277600947+	6854431447+	6437751848+	2972602949+
28+			2477540044+	2530162544+	1725597147+	3378847147+	4274188848+	1819636949+
29+			1919040044+	3682496343+	8911598246+	1628861847+	2777317048+	1094113049+
30+			1507500043+	1253748743+	4438660546+	7700369946+	1766414848+	6463206448+
31+			6075000042+	3324996742+	2192937246+	3550787846+	1100133948+	3751698348+
32+			3012500042+	1874998141+	1072591046+	1594145346+	6716378247+	2140323948+
33+			7500000040+	6249993840+	4820642045+	7100944045+	4017306547+	1200587548+
34+			3750000040+	1249998840+	2227090045+	3081084545+	2351299247+	6625813947+
35+			1250000040+		9774285044+	1288317345+	1351455847+	3597054047+
36+					4887455044+	4729794644+	7659226346+	1919749847+
37+					2436415044+	1463876444+	4241378946+	1008368447+
38+					4555000043+	6343756243+	2284086746+	5211248646+
39+					2148750043+	2603752643+	1277797146+	2622900246+
40+					9375000042+	1012501043+	6403499545+	1312349046+
41+					3287500042+	3587503542+	3397468545+	6421476045+
42+					3050000042+	3375003341+	1645274045+	3116932045+
43+					1125000041+	1375001341+	8706245044+	1457662045+
44+					5000000040+	5000004940+	3804040044+	6690165044+
45+					2500000040+	1250001240+	2757165044+	2607750044+
46+					1250000040+		6515000043+	1282500044+
47+							3455000043+	6087500043+
48+							1615000043+	2805000043+
49+							9637500042+	1137500043+

50+							3475000042+	4337500042+
51+							3175000042+	7750000041+
52+							1875000041+	3875000041+
53+							1000000041+	1875000041+
54+							5000000040+	8750000040+
55+							2500000040+	3750000040+
56+							1250000040+	1250000040+
57+							1250000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 4.11, V(LSUBX) = 0.10

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	25016234494+	4107373451+	1173673948+	8214754051+	8613935746+	1232213152+	8660536045+	1642952852+
1+	83369933494+	3132390151+	6603576548+	7215927451+	6292207347+	1132221952+	7619598646+	1542953252+
2+	14656695504+	2240777951+	1962255049+	6223705051+	2414323548+	1032293252+	3437252147+	1442962252+
3+	18078631504+	1495734451+	4092461649+	5251105051+	6518575448+	9326063951+	1085604048+	1343004852+
4+	17568647504+	9314800950+	6716394949+	4319430551+	1389287649+	8335712551+	2694998248+	1243156452+
5+	14326317504+	5429146350+	9227641849+	3454920651+	2484913849+	7359253951+	5627198148+	1143577052+
6+	10197999504+	2976142750+	1103516250+	2682688851+	3870945449+	6407645051+	1028131749+	1044560852+
7+	65101053494+	1542953750+	1179987450+	2020809851+	5385728649+	5494745951+	1685400049+	9465726851+
8+	38004887494+	7607844949+	1150461150+	1476931551+	6817832149+	4635704951+	2520292049+	8502699351+
9+	20591448494+	3586694449+	1037882750+	1048100251+	7967712749+	3844843151+	3479970749+	7564874051+
10+	10474782494+	1624717649+	8762798349+	7230592750+	8697119349+	3133660151+	4480678449+	6661850251+
11+	50500775484+	7102339048+	6986508949+	4856473250+	8950622549+	2509449351+	5425979149+	5803633451+
12+	23247980484+	3007649448+	5298951049+	3181013950+	8750686449+	1974746351+	6227316349+	4999676851+
13+	10283025484+	1237790748+	3846694049+	2035457650+	8176606249+	1527551651+	6819145649+	4257994751+
14+	43936853474+	4962484847+	2686712149+	1274575350+	7338287749+	1162123751+	7165344749+	3584504551+
15+	18218197474+	1940812047+	1813520749+	7823684049+	6352026549+	8700799350+	7258344549+	2982669351+
16+	73526108464+	7409840546+	1187636749+	4715159149+	5322169649+	6415574650+	7114387149+	2453418351+
17+	28899230464+	2764277846+	7571243348+	2794287449+	4330299349+	4662575150+	6767566349+	1995311951+
18+	11057435464+	1008678946+	4712126748+	1630550549+	3431172449+	3342611150+	6263352349+	1604882451+
19+	41518150454+	3588388445+	2870373448+	9380323148+	2654505149+	2365770550+	5652040249+	1277087151+
20+	15204170454+	1241862445+	1715700848+	5325557148+	2009736649+	1654383950+	4983379749+	1005813551+
21+	55109750444+	4157748444+	1008112048+	2986515648+	1492094449+	1143974350+	4301210149+	7843740450+
22+	17801350444+	1407924844+	5829001647+	1655600248+	1088240849+	7827759749+	3640853549+	6059472850+
23+	66738500434+	4382611643+	3326656947+	9075927347+	7809635848+	5304035349+	3027441349+	4639296050+
24+	20277500434+	1359919143+	1873499647+	4922556447+	5522904048+	3561286349+	2476801649+	3521867350+
25+	73915000424+	3650051342+	1041998747+	2642711347+	3853835748+	2370835949+	1996295049+	2652122150+
26+	16810000424+	1092515342+	5714562246+	1404879347+	2656121648+	1565775049+	1587062249+	1982009550+
27+	73250000414+	2160030341+	3118787446+	7385110746+	1810950748+	1026330249+	1245877949+	1470605250+
28+	72000000404+	7200103404+	1669312146+	3840260146+	1221690748+	6679832748+	9666304748+	1083790350+
29+	72000000404+		9099251045+	1964744746+	8168725147+	4318071848+	7420002148+	7936398849+
30+			4665750545+	9991668245+	5411784747+	2773195848+	5638590848+	5776905549+
31+			2447211045+	5001705445+	3560145547+	1769506448+	4245783548+	4181279249+
32+			1287182545+	2458987445+	2325557847+	1121836948+	3170256448+	3010237149+
33+			6269695044+	1203469645+	1506968247+	7067268447+	2348621248+	2156224849+
34+			3253960044+	5749299244+	9701342546+	4423157347+	1727121848+	1570785449+
35+			1596245044+	2719907544+	6208537746+	2749194847+	1261904348+	1090646649+
36+			7389100043+	1286782744+	3953828446+	1696095647+	9166087547+	7704067648+
37+			3652100043+	5925781743+	2504176746+	1038385047+	6617802947+	5418291448+
38+			1708000043+	2635886343+	1563795946+	6310958546+	4751186647+	3794304948+
39+			9780000042+	1054014543+	9770623045+	3801886846+	3399793847+	2645443948+
40+			3349500042+	4501562042+	6043804045+	2269892446+	2416426847+	1836566548+
41+			1452500042+	1812525042+	3696273545+	1342287146+	1712469247+	1269335348+
42+			8765000041+	5760079441+	2285984045+	7843149245+	1205891047+	8733535147+
43+			2160000041+	2160029841+	1352857545+	4549445845+	8479728846+	5979625247+
44+			7200000040+	7200099240+	8072575044+	2608620245+	5920154346+	4073699647+
45+			7200000040+		4831220044+	1475064145+	4140678346+	2759798247+
46+					2839670044+	8246373844+	2855961946+	1859969747+
47+					1591620044+	4581818844+	1975562546+	1245742047+
48+					9068100043+	2508907744+	1353671846+	8290732746+
49+					5307450043+	1342820244+	9300740045+	5477352464+
50+					2877200043+	7074856243+	6284878045+	3594824946+
51+					1733050043+	3598754043+	4276721045+	2340410946+
52+					8067000042+	1855727943+	2833337545+	1513675346+
53+					4357500042+	9194138042+	1894207045+	9702770745+
54+					2617000042+	4188562942+	1251685545+	6163024245+
55+					1380500042+	1800027042+	8230625044+	3874980745+
56+					5040000041+	7920118941+	5361750044+	2410011245+
57+					2880000041+	2880043241+	3513815044+	1481224245+
58+					1440000041+	7200108140+	2180445044+	9038236444+
59+					7200000040+		1384545044+	5444706244+
60+							8657900043+	3235740344+
61+							5464850043+	1892576544+
62+							3352400043+	1095905344+
63+							1888250043+	6344788843+
64+							1131950043+	3618800643+
65+							6818000042+	2024778345+
66+							3913000042+	1112565643+
67+							2244500042+	5916582842+
68+							1524500042+	2952041342+
69+							6480000041+	1512021242+
70+							3600000041+	7200100741+
71+							2160000041+	2880040341+
72+							1440000041+	7200100740+
73+							7200000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 5.00, V(LSUBX) = 0.00

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	67380000484	4999988051+	4500000046+	9999992051+		1500000852+		2000001452+
1+	33690000494	4006726051+	4540000047+	9000037051+	5000000045+	1400000852+		1900001452+
2+	84224000494	3047154051+	2270000048+	8000536051+	3400000046+	1300001352+		1800001452+
3+	14037400504	2171806251+	7567000048+	7003305051+	1720000047+	1200005252+	3000000045+	1700001452+
4+	17546700504	1436832451+	1891700049+	6013641051+	6450000047+	1100026352+	1400000046+	1600001752+
5+	17546700504	8773258850+	3783300049+	5042894151+	1936000048+	1000111952+	5500000046+	1500003452+
6+	14622300504	4932864950+	6305500049+	4109980251+	4839000048+	9003911051+	1830000047+	1400010652+
7+	10444500504	2554702650+	9007900049+	3240121551+	1037000049+	8011542051+	5230000047+	1300036152+
8+	65278000494	1220991250+	1125990050+	2460341951+	1944400049+	7029543051+	1309000048+	1200113952+
9+	36266000494	5400605449+	1251100050+	1793161651+	3240700049+	6066988151+	2908000048+	1100322652+

10+	1813300049+	2217902249+	1251100050+	1251091551+	4861100049+	5136840151+	5816000048+	1000822152+
11+	8242000048+	8485008548+	1137360050+	8341316750+	6628700049+	4255303351+	1057500049+	9019032051+
12+	3434000048+	3033003048+	9478000049+	5309080650+	8285900049+	3440053451+	1762500049+	8040418051+
13+	1321000048+	1015001048+	7290800049+	3224646450+	9560700049+	2707662751+	2711600049+	7079428951+
14+	4720000047+	3180003247+	5207700049+	1869293750+	1024360050+	2070879151+	3873700049+	6145555951+
15+	1570000047+	9300009346+	3471800049+	1034712150+	1024360050+	1536531551+	5164900049+	5250419751+
16+	4900000046+	2500002546+	2169900049+	5473110949+	9603400049+	1104620151+	6456100049+	4406932651+
17+	1400000046+	6900006045+	1276400049+	2769055549+	6473600049+	7687427750+	7595400049+	3628006451+
18+	4000000045+	1000001045+	7091000048+	1941302749+	7061300049+	5176015250+	8439400049+	2925034151+
19+	1000000045+		3732000048+	6227012548+	5574700049+	3370733450+	8883500049+	2306455751+
20+			1866000048+	2773005548+	4181000049+	2122922150+	8883500049+	1776712251+
21+			8890000047+	1185002448+	2986500049+	1293211350+	8460500049+	1335803751+
22+			4040000047+	4860009747+	2036200049+	7621507649+	7691400049+	9795000250+
23+			1760000047+	1910003847+	1328000049+	4347104349+	6688100049+	700.103050+
24+			7300000046+	7200014446+	8300000048+	2400702449+	5575500049+	4876015150+
25+			2900000046+	2600005246+	4980000048+	1284301349+	4458800049+	3308276750+
26+			1100000046+	9000018045+	2873000048+	6659006748+	3429800049+	2186417850+
27+			4000000045+	3000006045+	1596000048+	3348003348+	2540600049+	1407538650+
28+			1000000045+	1000002045+	8550000047+	1633001648+	1814700049+	8827191249+
29+			1000000045+		4420000047+	7730007747+	1251700049+	5393696449+
30+					2210000047+	3550003647+	8344000048+	3211896849+
31+					1070000047+	1580001647+	5383000048+	1864498149+
32+					5000000046+	6800006846+	3364000048+	1055398949+
33+					2300000046+	2800002846+	2039000048+	5826994248+
34+					1000000046+	1100001146+	1199000048+	3138996948+
35+					4000000045+	4000004045+	6850000047+	1649998448+
36+					2000000045+	1000001045+	3810000047+	8459991547+
37+					1000000045+		2060000047+	422999584?+
38+							1080000047+	2059997947+
39+							5600000046+	9699990346+
40+							2800000046+	4399995646+
41+							1400000046+	1899998146+
42+							6000000045+	7999992045+
43+							3000000045+	2999997045+
44+							1000000045+	9999990044+
45+							1000000045+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 5.03, V(LSUBX) = 0.05

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	7967359048+	5034346851+	9130085446+	10068718521+	1194375045+	1510308652+	5844000042+	2013746052+
1+	3695689349+	4042314351+	7892541147+	9068807551+	1741551646+	1410308652+	4302670044+	1913745952+
2+	8718881349+	3087238751+	3450522248+	8069688951+	1053596047+	1310310652+	2937845045+	1813745852+
3+	1394535050+	2219352051+	1022050149+	7074019551+	4404657947+	1210322852+	1736253546+	1713746152+
4+	1700496950+	1490919251+	2307509549+	6088570951+	1394007548+	1110379652+	6897075346+	1613748352+
5+	1685533250+	9325369150+	4236476149+	5126197851+	3580206548+	1010575152+	2229218947+	1513757252+
6+	1414007850+	5427081850+	6588002649+	4206189251+	7772834348+	9111291251+	6090724547+	1413788452+
7+	1032228950+	2942806650+	8923295749+	3352061451+	1468513649+	8124602451+	1444815948+	1313880752+
8+	6691476849+	1490763050+	1074246250+	2587166451+	2465144149+	7152599551+	3036966248+	1214117652+
9+	3912178649+	7078690049+	1167159750+	1929696551+	3736104049+	6205247851+	5746487948+	1114657552+
10+	2088211149+	3161939249+	1158222750+	1388942851+	5176291849+	5295257251+	9919648648+	1015772652+
11+	1027769049+	1333405349+	1059876550+	9640118650+	6620984649+	4437029451+	1578756649+	9178706251+
12+	4702466648+	5326431248+	9014877949+	6450688550+	7881208749+	3645012151+	2337081349+	8215653351+
13+	2014124648+	2021289948+	7174656049+	4162747950+	8787214149+	2931806851+	3241565049+	7275881751+
14+	8122423547+	7302787847+	5373621449+	2592275350+	9226768649+	2306474351+	4238131949+	6368525151+
15+	3096843447+	2515122447+	3806444549+	1559166450+	9166182549+	1773409351+	5249542049+	5503550451+
16+	1122664847+	8243091746+	2561316849+	9067035249+	8649785549+	1332006651+	6185797749+	4691070851+
17+	3860008446+	2561637946+	1643513349+	5103729049+	7781143449+	9771021150+	6958312449+	3940449451+
18+	1275279046+	7402033745+	1009086149+	2783940949+	6694081749+	7000092250+	7494113849+	3259411451+
19+	3955748545+	1940513945+	5946203648+	1473241649+	5523640549+	4898573050+	7746963149+	2653314451+
20+	1137413045+	4347537144+	3371975948+	7571646648+	4383444749+	3349419650+	7704105149+	2124687451+
21+	3166570044+	6640968543+	1844892448+	3782862748+	3353897149+	2238612450+	7385517349+	1673101351+
22+	3802250043+	1472354143+	9753575147+	1838976848+	2479695349+	1463195250+	6838321749+	1295370651+
23+	1281550043+	1060003042+	4995899447+	870451434?+	1775365949+	9357488549+	6126638849+	9860231650+
24+	6360000041+	2120005941+	2479805447+	4015174147+	1233142249+	5858394549+	5320903649+	7379421450+
25+	2120000041+		1195913747+	1805646447+	8323596948+	3592446149+	4487153749+	5430703050+
26+			5592110846+	7920359846+	5467722248+	2158859849+	3680417349+	3930699450+
27+			2568719946+	3376383746+	3500426248+	1272047449+	2940604449+	2798738650+
28+			1112302146+	1401135246+	2186447048+	7352786648+	2291997449+	1960838750+
29+			5348049545+	5381919045+	1333608148+	4171553548+	1745127249+	1352138450+
30+			1927300045+	2100552745+	7953287747+	2324132248+	1299316349+	9179514449+
31+			8248150044+	7464922244+	4642301347+	1272042048+	9470656448+	6136961449+
32+			3902745044+	2172491544+	2654401247+	6841835347+	6764052248+	4041475149+
33+			8176900043+	7828173243+	1488676347+	3617658747+	4737796048+	2622396449+
34+			4035450043+	2108356343+	8159040746+	1882162647+	3255969348+	1677094249+
35+			1429950043+	4240012642+	4395478346+	9625731546+	2197507648+	1057391149+
36+			1484000042+	1696005042+	2342735546+	4825328446+	1457529048+	6574393048+
37+			6360000041+	6360018941+	1237913946+	2367667646+	9501230047+	4032404148+
38+			2120000041+	2120006341+	6141603045+	1147924546+	6089631547+	2440539748+
39+			2120000041+		3135233545+	5423434645+	3847922547+	1457639248+
40+					1536770045+	2502867445+	2390825247+	8595311247+
41+					6968075044+	1119074845+	1466174547+	5005061147+
42+					4456810044+	4320917844+	8799820146+	2880987147+
43+					1297555044+	1907910744+	5264757046+	1636896247+
44+					6059000043+	7924623543+	3063817646+	9192813946+
45+					3093100043+	2829158443+	1823743046+	5080488646+
46+					1557150043+	8268024642+	1006666946+	2791908646+
47+					2332000042+	3816011342+	5782299045+	1509996646+
48+					1060000042+	1696005042+	3146033045+	8063151845+
49+					6360000041+	6360018941+	1861227545+	4172375045+
50+					2120000041+	2120006341+	9303800044+	2142828145+
51+					2120000041+		6041520044+	1043662345+
52+							2284845044+	5486491644+
53+							1262680044+	282.208444+
54+							6652600043+	1418606744+
55+							3517100043+	6812658243+
56+							1853950043+	2956353643+
57+							1514750043+	9540011542+
58+							2332000042+	4664005642+
59+							1272000042+	2120002642+
60+							6360000041+	8480010341+
61+							4240000041+	2120002641+
62+							2120000041+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 5.13, V(LSUBX) = 0.10

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	1083620249+	5134333851+	2757507947+	1026868652+	1212423446+	1540303652+	7956181044+	2053739752+
1+	4364110749+	4145169851+	1854404248+	9268961551+	1065556047+	1440304852+	8432709945+	1953740152+
2+	9234610249+	3199647751+	6529654348+	8271091051+	4831889647+	1340316352+	4396266646+	1853740752+
3+	1366818250+	2346472751+	1604165049+	7279750951+	1533575348+	1240376752+	1637699347+	1753746252+
4+	1589666750+	1629980151+	3088337749+	6304452551+	3806252048+	1140590352+	4757079047+	1653767652+
5+	1547682650+	1072455951+	4963665749+	5360037751+	7871558848+	1041184652+	1153891148+	1553837052+
6+	1312448050+	6697011650+	6928514149+	4465260151+	1410987749+	9425658951+	2425874548+	1454021652+
7+	9961191949+	3981923650+	8629055149+	3639768251+	2253105149+	8433582551+	4535935348+	1354449052+
8+	6901596249+	2262963550+	9776966449+	2900567351+	3268672349+	7504037351+	7688491548+	1255329852+
9+	4430964349+	1234169050+	1022682750+	2259136951+	4372342649+	6587179351+	11993277449+	1156979452+
10+	2667116349+	6484746949+	9989950649+	1719975151+	5454369749+	5714044751+	1742522949+	1059828452+
11+	1519389649+	3294942949+	9197536749+	1280714351+	6402587749+	4895454051+	2380756449+	9644201751+
12+	8254800648+	1624541649+	8041684649+	9334290050+	7123886049+	4140890051+	3082071749+	8713925951+
13+	4304609548+	7796272448+	6719154749+	6665613250+	7559094649+	3457565451+	3803614149+	7814469651+
14+	2166157348+	3651777048+	5393543349+	4668856650+	7688833449+	2849833051+	4496780049+	6953050851+
15+	1056614948+	1673457548+	4178087049+	3211458550+	7530456349+	2318989151+	5113911649+	6136600251+
16+	5015532147+	7517620147+	3135548649+	2171872250+	7128893549+	1863450851+	5614358349+	5371288351+
17+	2323378447+	3316239947+	2287423049+	1445843350+	6545109649+	1479201951+	5969387149+	4662121151+
18+	1053663347+	1438258447+	1626870049+	9485582549+	5844736249+	1160404451+	6164451449+	4012647951+
19+	4678586246+	6139489946+	1131037349+	6139614549+	5089567849+	9000554450+	6198772349+	3424819551+
20+	2052724146+	2575023046+	7703723848+	3924658449+	4331567649+	6906022450+	6083764849+	2898980251+
21+	8828615545+	1063297746+	5151715248+	2480080549+	3610252249+	5244651150+	5839477449+	2433978151+
22+	3672202045+	4344414845+	3388154848+	1550677949+	2952125949+	3944308650+	5491598849+	2027371951+
23+	1564002045+	1728087345+	2195406148+	9600930848+	2372247849+	2939180850+	5067958249+	1675681451+
24+	6316670044+	6757753044+	1403371348+	5890507548+	1876059149+	2171280050+	4596328349+	1374671451+
25+	2622630044+	2551356944+	8861899247+	3583465948+	1462112049+	1590987650+	4101936749+	1119624551+
26+	9551650043+	9676133143+	5532989247+	2162621048+	1124286449+	1156906850+	3606527749+	9055982550+
27+	4127300043+	3390429143+	3423447147+	1295079148+	8539804048+	8352561049+	3127429849+	7276370150+
28+	1274100043+	1232060643+	2095085147+	7698842147+	6413683048+	5990040749+	2677467849+	5809503950+
29+	6458500042+	3478029942+	1276633347+	4541995747+	4767196248+	4268894649+	2265253449+	4610385950+
30+	1643000042+	1094009442+	7665178046+	2661792847+	3509571548+	3024472549+	1895416749+	3637795450+
31+	4675000041+	3530030341+	4587854746+	1548112647+	2561528348+	2131011249+	1569840949+	2854747850+
32+	2205000041+	7950068340+	2735057046+	8932215246+	1854689048+	1493704249+	1287895849+	2228685750+
33+	2650000040+	2650022840+	1602072546+	5118382846+	1333020048+	1041868449+	1047314449+	1731414250+
34+	2650000040+		9428886545+	2906634846+	9513440747+	7233355448+	8466465948+	1338875250+
35+			5464909045+	1637782446+	6749666647+	4999380448+	6760481048+	1030801050+
36+			3127612545+	9154249945+	4760693547+	3440377648+	5372894648+	7903322849+
37+			1798377545+	5058312845+	3341215947+	2357448548+	4241715248+	6035930149+
38+			1016623545+	2760766645+	2331627947+	1608644148+	3328107348+	4592712549+
39+			5917610044+	1479851645+	1620905447+	1093004948+	2596858248+	3482308249+
40+			3147265044+	7907019144+	1121425447+	7394574247+	2015235148+	2631591349+
41+			1724740044+	4162811144+	7722324146+	4980536047+	1556379348+	1982399645+
42+			9793900043+	2143356044+	5307738246+	3338736547+	1196038948+	1488847749+
43+			4941000043+	1103298244+	3620366946+	2227716147+	9157036847+	1114900349+
44+			2581550043+	5573441643+	2462209446+	1478735447+	6979074547+	8325239348+
45+			1498750043+	2695470143+	1672686246+	9759777346+	5304501847+	6199388248+
46+			6888000042+	1316259843+	1128794746+	6404903746+	4012213947+	4603992248+
47+			3416500042+	6258546842+	7552800045+	4178835046+	3028828247+	3409820548+
48+			1961000042+	2771020742+	5040017545+	2708053246+	2277049147+	2518534448+
49+			8205000041+	1244509342+	3368379045+	1741277546+	1709969847+	1854954248+
50+			3530000041+	5385040241+	2216503045+	1111342946+	1277958647+	1362373048+
51+			2470000041+	1855013941+	1470780045+	7030603045+	9544789046+	9975883547+
52+			5300000040+	7950059440+	9423435044+	4418572945+	7091820946+	7282524147+
53+			2650000040+	2650019840+	6105600044+	2748894845+	5269019746+	5298352347+
54+			2650000040+		3986790044+	1689782345+	3900797546+	3841086947+
55+					2535625044+	1029352345+	2883110046+	2773904247+
56+					1559850044+	6224871244+	2124314046+	1995034747+
57+					9864300043+	3716083644+	1563031146+	1428598447+
58+					6099150043+	2193734844+	1141213646+	1018466447+
59+					3751850043+	1281306644+	8333059045+	7224566146+
60+					2179000043+	7440667243+	6059530545+	5097780846+
61+					1325250043+	4247288443+	4397368045+	3576953246+
62+					7901500042+	2379171543+	3171293545+	2495866046+
63+					4652500042+	1301211743+	2259142045+	1731910546+
64+					2905500042+	6885062242+	1613848045+	1193871146+
65+					1438500042+	3663533142+	1148579545+	8172174745+
66+					8120000041+	1880517042+	8090960044+	5554229745+
67+					4590000041+	9095082141+	5675170044+	3745386945+
68+					3000000041+	3975035941+	3998995044+	2504065745+
69+					1060000041+	1855016841+	2728765044+	1662647145+
70+					5300000040+	7950071840+	1876315044+	1094107145+
71+					2650000040+	2650023940+	1280470044+	7132001144+
72+					2650000040+		8735700043+	4603411244+
73+							5809400043+	2948398244+
74+							3775100043+	1874329744+
75+							2504650043+	1177774344+
76+							1618150043+	7316857543+
77+							1064700043+	4474135243+
78+							6753500042+	2696121243+
79+							4468000042+	1593462543+
80+							2542000042+	9376073742+
81+							1650500042+	5359542142+
82+							9710000041+	2993523542+
83+							5915000041+	1598512642+
84+							4060000041+	7950062541+
85+							1855000041+	3975031241+
86+							1060000041+	1855014641+
87+							5300000040+	7950062540+
88+							2650000040+	2650020840+
89+							2650000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 6.00, V(LSUBX) = 0.00

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	2479000048+	5999972051+	6000000045+	1199998552+		1799999852+		2399999452+
1+	1487300049+	5002451051+	7400000046+	1099999152+		1699999852+		2299999452+
2+	4461800049+	4019803051+	4420000047+	1000007152+	2000000045+	1599999852+		2199999452+
3+	8923500049+	3081773151+	1770000048+	9000593051+	1500000046+	1500000052+		2099999452+
4+	1338530050+	2232978251+	5309000048+	8002885051+	6700000046+	1400001752+	1000000045+	1999999452+
5+	1606230050+	1518036551+	1274100049+	7010486051+	2400000047+	1300010152+	3000000045+	1899999552+

6+	1606230050+	9637179650+	2548100049+	6030828051+	7190000047+	1200042552+	1000000046+	1799999952+
7+	1376770050+	5700225750+	4368200049+	5076651151+	1850000048+	1100146852+	3400000046+	1700001352+
8+	1032580050+	3140043150+	6552300049+	4166156251+	4163000048+	1000436152+	1030000047+	1600006152+
9+	6883800049+	1612441650+	8736400049+	3321184351+	8325000048+	9011417051+	2750000047+	1500021252+
10+	4130300049+	7732207749+	1048370050+	2563576651+	1498500049+	8026798051+	6600000047+	1400063852+
11+	2252900049+	3470303549+	1143680050+	1910805951+	2452100049+	7057164151+	1439000048+	1300172452+
12+	1126400049+	1461301549+	1143680050+	1372403451+	3678200049+	6112051151+	2878000048+	1200424952+
13+	5199000048+	5787005848+	1055700050+	9483689550+	5092900049+	5203720251+	5314000048+	1100965252+
14+	2228000048+	2160002248+	90489000049+	6299046350+	6548000049+	4346318351+	9109000048+	1002036952+
15+	8910000047+	7610007647+	7239100049+	4019294050+	7857600049+	3554396651+	1457500049+	9040195051+
16+	3340000047+	2530002547+	5429300049+	2463452550+	8839700049+	2841050851+	2186200049+	8074595951+
17+	1180000047+	7900007946+	3832500049+	1450541550+	9359700049+	2216102251+	3086400049+	7130858951+
18+	3900000046+	2300002346+	2555000049+	8208808249+	9359700049+	1684750751+	4115200049+	6217985851+
19+	1200000046+	6000006045+	1613700049+	4467204549+	8867100049+	1246996251+	5198200049+	5346264751+
20+	4000000045+	1000001045+	9682000048+	2339302349+	7980400049+	8979129050+	6237800049+	4526525551+
21+	1000000045+		5533000048+	1179601249+	6840300049+	6286336350+	7128900049+	3769164251+
22+			3018000048+	5732005748+	5596600049+	4277574350+	7777000049+	3083091951+
23+			1574000048+	2686002748+	4380000049+	2828472850+	8115200049+	2474789551+
24+			7870000047+	1214001248+	3285000049+	1817371850+	8115200049+	1947639151+
25+			3780000047+	5290005347+	2365200049+	1134771150+	7790500049+	1501640551+
26+			1740000047+	2220002247+	1637400049+	6886906949+	7191300049+	1133546951+
27+			7800000046+	8900008946+	1091600049+	4063504149+	6392200049+	8373661650+
28+			3300000046+	3400003446+	7018000048+	2331702349+	5479100049+	6051073950+
29+			1400000046+	1200001246+	4356000048+	1301701349+	4534400049+	4276395750+
30+			5000000045+	4000004045+	2613000048+	7073007148+	3627500049+	2955157050+
31+			2000000045+	1000001045+	1517000048+	3742003748+	2808400049+	1996668050+
32+			1000000045+		8540000047+	1928001948+	2106300049+	1319018750+
33+					4660000047+	9680009747+	1531900049+	8519991549+
34+					2460000047+	4740004747+	1081300049+	5381694649+
35+					1270000047+	2260002347+	7415000048+	3324696749+
36+					6300000046+	1050001147+	4943000048+	2009198049+
37+					3100000046+	4700004746+	3206000048+	1187998849+
38+					1500000046+	2000020046+	2025000048+	6873993148+
39+					7000000045+	8000008045+	1246000048+	3892996148+
40+					3000000045+	3000030045+	7480000047+	2157997848+
41+					1000000045+	1000001045+	4380000047+	1170998848+
42+					1000000045+		2500000047+	6219993847+
43+							1400000047+	3229996847+
44+							7600000046+	1639998447+
45+							4100000046+	8099991946+
46+							2100000046+	3899996146+
47+							1100000046+	1799998246+
48+							5000000045+	7999992045+
49+							3000000045+	2999997045+
50+							1000000045+	9999990044+
51+							1000000045+	

PL DSUBX ~ POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX ~ LOGNORMAL WITH LSUBM = 6.04, V(LSUBX) = 0.05

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	31119748484	60399155514	15336051464	12079851524	37540500434	18119805524	90000000394	24159757524
1+	17184886494	50430277514	15800129474	11079866524	15556755454	17119804524	12563000434	23159754524
2+	48176608494	40633244514	81618676474	10080038524	11257028464	16119802524	87827000434	22159755524
3+	91408276494	31317981514	28584251484	90810299514	56843427464	15119816524	11380280454	21159752524
4+	13203341504	22916801514	76123276484	80848777514	21108678474	14119885524	55121940454	20159751524
5+	15484089504	15835957514	16453214494	70963380514	63605383474	13120167524	19760357464	19159760524
6+	15354739504	10303524514	30050048494	61242513514	16189150484	12121085524	61693530464	18159787524
7+	13240481504	63065694504	47718487494	51822143514	35828720484	11123621524	17025221474	17159878524
8+	10133016504	36336636504	67239980494	42878962514	70299655484	10129740524	41701428474	16160138524
9+	69904318494	19740614504	85401216494	34608178514	12423550494	91428888514	91923993474	15160811524
10+	44006722494	10135034504	98977362494	27191407514	20022265494	81684613514	18473107484	14162408524
11+	25531536494	49301336494	10571465504	20764408514	29724251494	72140553514	34178525484	13165850524
12+	13762969494	22783909494	10490241504	15394557514	40986431494	62893741514	58693113484	12172707524
13+	69408504484	10029470494	97371272494	11073726514	52858281494	54056797514	94198525484	11185439524
14+	32936954484	42158971484	85029394944	77266105504	64132462494	45748431514	14210075494	10207587524
15+	14780265484	16960236484	70199720494	52297827504	73572378494	38081397514	20254512494	92439460514
16+	62981330474	65417910474	55030315494	34349522504	80147965494	31150082514	27402404494	83005602514
17+	25588705474	24214900474	41115663494	21904236504	83222606494	25020249514	35319995494	73845737514
18+	99384262464	86003604464	29376299494	13570515504	82637515494	19722645514	43534801494	65039079514
19+	36787696464	29248151464	20131341494	81744230494	78697649494	15251417514	51467612494	56667766514
20+	13434314464	92776956454	13267664494	47914630494	72063766494	11567169514	58517342494	48811129514
21+	45806965454	27415780454	84297631484	27352682494	63599622494	86035554504	64139562494	41539669514
22+	13467775454	78616428444	51744930484	15220489494	54212185494	62759415504	67916340494	34909600514
23+	47424150444	17753029444	30745530484	82627859484	44719667494	44904503504	69605184494	28958696514
24+	96938000434	43138570434	17716812484	43796337494	35762283494	31521562504	69161011494	23703848514
25+	33271000434	56850093424	99170843474	22681613484	27771677494	21714862504	66726226494	19140606514
26+	27775000424	15025024424	53980975474	11483967484	20974186494	14685331504	62599356494	15244628514
27+	13400000424	97500159404	28681864474	56844130474	15427485494	97532229494	57180579494	11974664514
28+	32500000404	32500053404	14805666474	27530431474	11066520494	63638654494	50919129494	92764676504
29+	32500000404		75232753464	13022389474	77500923484	40811616494	44256016494	70874814504
30+			36733463464	60376137464	53048683484	25734685494	37583683494	53410559504
31+			17751972464	27261830464	35529661484	15962628494	31219964494	39704670504
32+			85916240454	11899483464	23306744484	97435431484	25391784494	29120782504
33+			37129120454	51287504454	14987206484	58551374484	20239390494	21076073504
34+			18153485454	20709288454	94484813474	34654555484	15823105494	15055305504
35+			76911350444	82845434444	58537400474	20206231484	12143815494	10616848504
36+			26409200444	35509272444	35585634474	11611653484	91556596484	73927721494
37+			11941050444	14582288444	21304007474	65756481474	67856092484	50842633494
38+			46728500434	55963455434	12539913474	36700466474	49471842484	34543151494
39+			35358500434	12832490434	72732073464	20184386474	35500262484	23190855494
40+			45400000424	50599960424	41443790464	10941522474	25090604484	15388593494
41+			16650000424	18274985424	23176391464	58430447464	17473182484	10095393494
42+			14050000424	25999979414	13064319464	30622118464	11991480484	65495062484
43+			97500000404	97499922404	69602015454	15878126464	81226592474	42027707484
44+			32500000404	32499974404	37032475454	80934389454	54245987474	26683015484
45+			32500000404		20272730454	40138262454	35822648474	16762925484
46+					10805495454	19605798454	23298687474	10425102484
47+					47278850444	98788464444	15025589474	64171481474
48+					23804500444	48797881444	95288752464	39117537474
49+					13798550444	22611838444	60388408464	23592472474
50+					60081000434	10224367444	37305122464	14106252474
51+					43813500434	38450064434	23176280464	83505445464
52+					96975000424	18470031434	13845784464	49124678464
53+					49950000424	81875136424	84126715454	28589697464

54+					32000000042+	2900004842+	5004458045+	1646739546+
55+					1632500042+	8125013541+	2978253045+	9349549045+
56+					2275000041+	3575005941+	1756806045+	5209960545+
57+					1300000041+	1300002241+	1118737545+	2827178945+
58+					6500000040+	3250005440+	5447885044+	1563135345+
59+					3250000040+		3178060044+	8438804144+
60+							1783430044+	4424317144+
61+							1117895044+	2193261144+
62+							6222600043+	1080100544+
63+							2164500043+	5892002843+
64+							1217500043+	3147501543+
65+							7115000042+	1620500843+
66+							3785000042+	8050003942+
67+							2025000042+	3680001842+
68+							1697500042+	1332500642+
69+							2925000041+	6825003341+
70+							1625000041+	3250001641+
71+							9750000040+	1300000641+
72+							6500000040+	3250001640+
73+							3250000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 6.16, V(LSUBX) = 0.10

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	4833221548+	6160877651+	7021914146+	1232176852+	1929699045+	1848266452+	8138400043+	2464357852+
1+	2261355049+	5165711051+	5411008247+	1132183552+	2002886146+	1748266552+	10919370045+	2364358152+
2+	5544405649+	4193158151+	2172464248+	1032244552+	1024027347+	1648269352+	6338399045+	2264358452+
3+	9485745949+	3276050651+	6073322648+	9325230751+	3667465947+	1548281452+	2710338346+	2164358552+
4+	1272509450+	2453802651+	1327192149+	8334088351+	1021961148+	1448330552+	8806976346+	2064362252+
5+	1426267550+	1758807351+	2415742949+	7356217551+	2368484148+	1348482252+	2372065447+	1964374152+
6+	1390006750+	1206442551+	3809611449+	6402504851+	4749928048+	1248870152+	5522823947+	1864410352+
7+	1210531750+	7930807050+	5349432949+	5486888951+	8472251348+	1149733152+	1142835848+	1764501452+
8+	9609470649+	5007745850+	6820658249+	4624768351+	1370093149+	1051443752+	2142321448+	1664707252+
9+	7058620949+	3045649850+	8014949849+	3830855451+	2038559749+	9545242351+	3693180148+	1565126852+
10+	4854537449+	1789429950+	8781789049+	3117093251+	2822908349+	8596433551+	5922967448+	1465915752+
11+	3155619549+	1018673550+	9055485149+	2491150751+	3671657749+	7675854651+	8917087348+	1367297152+
12+	1953816549+	5634853449+	8855017649+	1955764551+	4519569649+	6791992651+	1269403049+	1269570352+
13+	1159670549+	3036826149+	8263420349+	1508929951+	5298177849+	5953275551+	1719160749+	1173112952+
14+	6634158448+	1598492449+	7398366649+	1144731151+	5946218449+	5167645051+	2262665549+	1078374452+
15+	3674672648+	8235872848+	6383917149+	8545173150+	6417906149+	4441426151+	2769026349+	9858626551+
16+	1978381148+	4161568148+	5329839449+	6281437750+	6687380549+	3779387551+	3320812149+	8961197751+
17+	1038760248+	2065684248+	4320093049+	4550694950+	6749732249+	3184224051+	3852958949+	8096977451+
18+	5334446647+	1008580748+	3409690649+	3251969750+	6618375549+	2656559951+	4337714149+	7271287951+
19+	2683220347+	4849326147+	2627353849+	2294219150+	6320903849+	2195079751+	4750631449+	6488976251+
20+	1328680747+	2296117647+	1981163449+	1599208550+	5893380049+	1796810851+	5072853849+	5754170951+
21+	6461858846+	1071616047+	1464907349+	1102317750+	5375242749+	1457476551+	5292151049+	5070096551+
22+	3082542146+	4933129146+	1064129249+	7519202049+	4804790949+	1171895451+	5403498949+	4438944151+
23+	1461884446+	2232703046+	7606588448+	5079374849+	4216192949+	9343629550+	5408565849+	3861827051+
24+	6785454545+	9941900445+	5368564348+	3400219849+	3637253649+	7389936650+	5314953149+	3338797951+
25+	3131897545+	4342360845+	3725214248+	2256930349+	3089063549+	5799975750+	5134585549+	2868918251+
26+	1376326045+	1874780545+	2558626348+	1486169149+	2585898649+	4518927550+	4882438949+	2450385651+
27+	6331370044+	7835534844+	1738605448+	9712749348+	2136084849+	3496474750+	4574862049+	2080678951+
28+	2578225044+	3254759344+	1169134348+	6302442748+	1743007549+	2687633850+	4228421549+	1756721351+
29+	1243695044+	1252259744+	7796142847+	4061290948+	1406188449+	2053097650+	3858733849+	1475049151+
30+	4575050043+	4934797543+	5149050047+	2599766648+	1122626949+	1559182850+	3479691949+	1231964551+
31+	1769600043+	1922138043+	3376333147+	1653157048+	8876307948+	1177532950+	3103311449+	1023677851+
32+	8140000042+	6791134142+	2199862247+	1044186048+	6955696048+	8846480649+	2739129749+	8464249350+
33+	2429000042+	2501049442+	1420473547+	6552054447+	5405921748+	6613214749+	2394453549+	6985637050+
34+	1399000042+	6400126441+	9127013746+	4082745547+	4168923348+	4920551549+	2074244549+	5706475150+
35+	3285000041+	1780035241+	5819059146+	2526154647+	3192765548+	3644789449+	1781774849+	4654741350+
36+	8900000040+	4450087940+	3682387946+	1551479447+	2428901848+	2688309849+	1518488049+	3781188850+
37+	4450000040+		2320694246+	9450494446+	1836825148+	1974725549+	1284551149+	3059487750+
38+			1448934346+	5706930646+	1381191548+	1444827249+	1079169549+	2466245250+
39+			9067026545+	3412326146+	1033306248+	1053050749+	9007727348+	1980920850+
40+			5523966545+	2024440446+	7692542647+	7646068648+	7473325348+	1585675350+
41+			3368457045+	1188960746+	5700347247+	5530900848+	6165208648+	1265165250+
42+			2057198045+	6903325145+	4206937347+	3985778448+	5058654948+	1006307950+
43+			1215134545+	3974279445+	3091491047+	2861358748+	4130627748+	7980383549+
44+			7177730044+	2260389545+	2262850347+	2046094048+	3356721348+	6310757849+
45+			4337055044+	1264285145+	1651655847+	1457119148+	2716482948+	4976811749+
46+			2446335044+	7018937644+	1200313947+	1033312748+	2188817048+	3914518249+
47+			1396135044+	3841402144+	8687626046+	7295402247+	1757438248+	3071111349+
48+			8163350043+	2060026044+	6264508146+	5126457247+	1405569148+	2403451549+
49+			4436000043+	1094999144+	4508954946+	3583975447+	1120907748+	1876351549+
50+			2383050043+	5735800243+	3225565046+	2492398347+	8906609347+	1461344249+
51+			1415900043+	2904700743+	2304864646+	1723383647+	7058713547+	1135404949+
52+			6600000042+	1489526043+	1629569546+	1184860247+	5576219947+	8800539648+
53+			3575000042+	7343628342+	1151147746+	8929717466+	4395718147+	6804664148+
54+			2172500042+	3367558842+	8129187045+	5488510846+	3455305347+	5248367848+
55+			8795000041+	1564027342+	5676085545+	3696984446+	2710527547+	4037610048+
56+			4620000041+	6400111841+	3919150045+	2473078146+	2121018247+	3097909548+
57+			3285000041+	1780031141+	2712569545+	1641094446+	1656273447+	2370314948+
58+			8900000040+	4450077740+	1857611045+	1080373146+	1289802647+	1808351648+
59+			4450000040+		1264760045+	7054163145+	1002602047+	1375370548+
60+					8465580044+	4569383245+	7776259346+	1042651348+
61+					5684220044+	2931178245+	6018652446+	7876967647+
62+					3778280044+	1861406545+	4645937946+	5929297847+
63+					2488415044+	1169470245+	3570395746+	4446230147+
64+					1642145044+	7263804344+	2741628146+	3320209247+
65+					1036065044+	4475083944+	2100124346+	2468356247+
66+					6632650043+	2722449144+	1601317046+	1826519947+
67+					4206150043+	1633092444+	1217749346+	1344818247+
68+					2707650043+	9643591543+	9249153045+	9848940546+
69+					1589350043+	5663962543+	6959141045+	7174631946+
70+					9666500042+	3273715043+	5228327045+	5196250846+
71+					5868500042+	1850136743+	3907558545+	3740712846+
72+					3781000042+	1013420143+	2911810545+	2675938046+
73+					1981500042+	5548110242+	2148211045+	1902350046+
74+					1146500042+	2943558542+	1573349045+	1343587246+
75+					6400000041+	1485529542+	1151498045+	9421623345+
76+					4620000041+	6675132641+	8340035044+	6558896645+
77+					1780000041+	3115061941+	6032875044+	4530189745+
78+					8900000040+	1335026541+	4309735044+	3104781945+
79+					4450000040+	4450088440+	3079370044+	2110356145+

80+					4450000040+		2142760044+	1423873245+
81+							1510635044+	9516705244+
82+							1041105044+	6305342744+
83+							7170500043+	4135105544+
84+							4976000043+	2681932244+
85+							3282500043+	1726368644+
86+							2202650043+	1099061444+
87+							1447500043+	6920234743+
88+							9530500042+	4297388643+
89+							6430000042+	2627601143+
90+							3901500042+	1600831243+
91+							2471000042+	9642187642+
92+							1502500042+	5747111842+
93+							9515000041+	3354565342+
94+							6400000041+	1913537242+
95+							3115000041+	1112521642+
96+							1780000041+	6230121241+
97+							1335000041+	3115060641+
98+							8900000040+	1335026041+
99+							4450000040+	4450086640+
100+							4450000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 7.00, V(LSUBX) = 0.00

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	9120000047+	6999981051+	1000000045+	1399990852+		2099996752+		2800005052+
1+	6383000048+	6000893051+	1200000046+	1299990952+		1999996752+		2700005052+
2+	2234100049+	5008188051+	8100000046+	1199992252+		1899996752+		2600005052+
3+	5212900049+	4037824151+	3800000047+	1100001652+	1000000045+	1799996752+		2500005052+
4+	9122600049+	3119589251+	1331000048+	1000049052+	6000000045+	1699996852+		2400005052+
5+	1277170050+	2292580651+	3737000048+	9002295051+	2600000046+	1599997552+		2300005052+
6+	1490030050+	1593289251+	8696000048+	8007836951+	9000000046+	1500000852+		2200005052+
7+	1490030050+	1043001151+	1739200049+	7022074851+	2710000047+	1400013152+	2000000045+	2100005052+
8+	1303770050+	6417162850+	3043600049+	6053704451+	7110000047+	1300052552+	6000000045+	2000005252+
9+	1014050050+	3708087450+	4734400049+	5115769751+	1660000048+	1200163052+	2000000046+	1900006052+
10+	7098300049+	2013064050+	6628200049+	4225178551+	3485000048+	1100439552+	5600000046+	1800008852+
11+	4517100049+	1027872150+	8435900049+	3400868651+	6654000048+	1001064552+	1440000047+	1700017252+
12+	2635000049+	4943909949+	9841800049+	2660916751+	1164400049+	9023549051+	3350000047+	1600040052+
13+	1418800049+	2244104549+	1059890050+	2019381851+	1881000049+	8048097151+	7220000047+	1500096352+
14+	7094000048+	9631019348+	1059890050+	1483834751+	2821500049+	7091455251+	1444000048+	1400224852+
15+	3311000048+	3915007848+	9892300049+	1054275451+	3950100049+	6163028351+	2695000048+	1300497752+
16+	1448000048+	1510003048+	8655800049+	7236380450+	5184500049+	5274102551+	4717000048+	1201040152+
17+	5960000047+	5530011147+	7128300049+	4795577250+	6404400049+	4437021951+	7769000048+	1102054252+
18+	2320000047+	1920003847+	5544200049+	3067596350+	7471700049+	3663985351+	1208500049+	1003845252+
19+	8500000046+	6300012646+	4085200049+	1894029250+	8258200049+	2965665951+	1781000049+	9068447251+
20+	3000000046+	1900003846+	2859700049+	1128977650+	8671200049+	2349928751+	2493400049+	8116252351+
21+	1000000046+	5000010045+	1906400049+	6498928549+	8671200049+	1820903651+	3324500049+	7188991651+
22+	3000000045+	1000002045+	1213200049+	3614460249+	8277000049+	1378590851+	4231200049+	6294975951+
23+	1000000045+		7385000048+	1943178649+	7557300049+	1019048051+	5151000049+	5443272351+
24+			4308000048+	1010388949+	6612600049+	7350784750+	6009500049+	4643078951+
25+			2412000048+	5083944148+	5554600049+	5172350350+	6730700049+	3902980751+
26+			1299000048+	2475972848+	4486400049+	3549377150+	7248400049+	3230189751+
27+			6740000047+	1166987248+	3489400049+	2375044850+	7516900049+	2629882951+
28+			3370000047+	5319941547+	2617100049+	1549653150+	7516900049+	2104745351+
29+			1630000047+	2339974347+	1695100049+	9859719749+	7257700049+	1654777051+
30+			7600000046+	9899891146+	1326600049+	6118012249+	6773800049+	1277385851+
31+			3400000046+	3999956046+	8987000048+	3702907449+	6118300049+	9677329050+
32+			1500000046+	1499983546+	5897000048+	2186504449+	5353500049+	7192631650+
33+			6000000045+	4999945045+	3753000048+	1259802549+	4542400049+	5243285750+
34+			3000000045+	9999890044+	2318000048+	7084014248+	3740800049+	3748181250+
35+			1000000045+		1391000048+	3888007848+	2992600049+	2627157950+
36+					8110000047+	2083004248+	2327600049+	1805395450+
37+					4600000047+	1089002248+	1761400049+	1216393650+
38+					2540000047+	5550011147+	1297900049+	8035324149+
39+					1370000047+	2750055547+	9318000048+	5204615649+
40+					7200000046+	1320002647+	6523000048+	3305709949+
41+					3700000046+	6100012246+	4455000048+	2059106249+
42+					1800000046+	2700054446+	2970000048+	1258003849+
43+					9000000045+	1100002246+	1934000048+	7539022648+
44+					4000000045+	4000008045+	1231000048+	4432013348+
45+					2000000045+	1000002045+	7660000047+	2556007748+
46+					1000000045+		4660000047+	1446004348+
47+							2780000047+	8020024147+
48+							1620000047+	4360013147+
49+							9300000046+	2320007047+
50+							5200000046+	1210003647+
51+							2800000046+	6200018646+
52+							1500000046+	3100009346+
53+							8000000045+	1500004546+
54+							4000000045+	7000021045+
55+							2000000045+	3000009045+
56+							1000000045+	1000003045+
57+							1000000045+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 7.05, V(LSUBX) = 0.05

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	12285574484+	7046511751+	2748253045+	1409300452+	3720000041+	2113955452+		2818612252+
1+	7841988948+	6047740251+	3228695946+	1309300752+	9470550043+	2013955152+	1240000041+	2718612152+
2+	2539044849+	5056810651+	1894542747+	1209304052+	1123802045+	1913955352+	8680000041+	2618612152+
3+	5559315649+	4091272151+	7613238747+	1109326752+	7302403045+	1813955652+	5884450043+	2518612152+
4+	9259220049+	3181327151+	2321003348+	1009425452+	3117724346+	1713956052+	5131625044+	2418611852+
5+	1251115350+	2363974751+	5743354448+	9097559151+	1065074347+	1613960252+	1777637045+	2318612052+
6+	1428438450+	1671735751+	1198463549+	8106609751+	3068837547+	1513975252+	5878859545+	2218612152+
7+	1417259750+	1122341451+	2174238449+	7127644151+	7710660347+	1414020252+	1895035946+	2118613152+
8+	1247264650+	7146741150+	3497295749+	6170421651+	1716281648+	1314142752+	5203507646+	2018615952+
9+	9889549649+	4317345450+	5066341249+	5248172051+	3439943648+	1214436752+	1297696447+	1918623652+
10+	7152250449+	2476913850+	6691818949+	4376585951+	6284130848+	1115074752+	2935159847+	1818644652+
11+	4765083549+	1351713250+	8139419449+	3571918151+	1056935149+	1016341252+	6112298847+	1718695052+
12+	2948599849+	7030253449+	9191750449+	2848645251+	1649910549+	9186646251+	1180590348+	1618806552+

13+	1706266249+	3491999549+	9703811249+	2217289851+	2406968549+	8226379751+	2132273348+	1519035652+
14+	9287799248+	1660027049+	9632827549+	1682972851+	3300563849+	7290182751+	3618854048+	1419478352+
15+	4779594648+	7568422448+	9036590149+	1244984751+	4275671649+	6386991651+	5801453048+	1320282952+
16+	2335029648+	3316213348+	8045997649+	8973622350+	5255417549+	5526558351+	8823406048+	1221667852+
17+	1087380148+	1399054348+	6825435449+	6302002750+	6152715849+	4718679051+	1277779649+	1123934752+
18+	4843147147+	5692849547+	5534965749+	4312929350+	6884035149+	3972327951+	1767953749+	1027479452+
19+	2064810947+	2238346247+	4303578249+	2877353850+	7383236349+	3294817251+	2344025249+	9327924051+
20+	8513493646+	8486717546+	3216951249+	1872137650+	7610923149+	2691139951+	2986011349+	8404492551+
21+	3376024946+	3103542346+	2317319849+	1188617450+	7558824949+	2163572551+	3663640449+	7510922051+
22+	1272636546+	1096421646+	1612236649+	7368297549+	7248362949+	1711593651+	4339006349+	6653987451+
23+	4837982545+	3619487345+	1085444349+	4462665249+	6724372.49+	1332099251+	4970404849+	5840443751+
24+	1686474545+	1112783345+	7084771548+	2642481349+	6045850449+	1019849551+	5517085449+	5076604751+
25+	6136195044+	2925685744+	4490367048+	1530776549+	5276835249+	7680586950+	5943839249+	4367937051+
26+	1354370044+	8597875643+	2768022848+	8681094748+	4477702949+	5690366150+	6224750549+	3718708251+
27+	6112900043+	1482713043+	1662124148+	4822458848+	3699163849+	4147919550+	6345689449+	3131727551+
28+	5423000042+	4805842242+	9728079747+	2625952548+	2979149249+	2975392950+	6305117949+	2608204851+
29+	4393000042+	2060018141+	5562607947+	1402256948+	2341632249+	2100783450+	6113236049+	2147733651+
30+	2060000041+		3105863147+	7348239647+	1798393949+	1460339250+	5790094949+	1748395251+
31+			1696115147+	3779783447+	1350963649+	9997365449+	5362685449+	1406958151+
32+			9106981246+	1907448147+	9935684148+	6742311449+	4861479349+	1119149151+
33+			4757062846+	9458135546+	7161153048+	4480834849+	4317554749+	8799549750+
34+			2463042746+	4598868846+	5061644948+	2935480349+	3759618949+	6839368850+
35+			1233981646+	2202652746+	3512237148+	1896294749+	3212496049+	5255153650+
36+			6006819545+	1040422046+	2393325848+	1208335949+	2955970049+	3992190950+
37+			2957676545+	4788752745+	1603281748+	7597116748+	2227742949+	2998790750+
38+			1377811545+	2130971345+	1056527848+	4714171748+	1802384349+	2227667250+
39+			7970055044+	8510057144+	6853592047+	2887763948+	1438058949+	1636783550+
40+			2664470044+	3680481744+	4378452547+	1746720948+	1129742949+	1189707450+
41+			1135050044+	1515384844+	2755616147+	1043527748+	8743142748+	8556068849+
42+			7444700043+	4853415443+	1708002347+	6158984847+	6669037548+	6089384849+
43+			1626900043+	1997706443+	1046263447+	3590709647+	5016767148+	4289611749+
44+			6247000042+	7689024542+	6296776246+	2068707447+	3723057648+	2991520249+
45+			5011000042+	1648005242+	3772827846+	1176388147+	2727481048+	2065738549+
46+			6180000041+	6180019741+	2216875646+	6613554446+	1972813148+	1412707449+
47+			2060000041+	2060006641+	1275770146+	3680120946+	1410197348+	9569592648+
48+			2060000041+		7236934545+	2022468946+	9955786047+	6422325348+
49+					4238079545+	1088516946+	6955558247+	4270646548+
50+					2292716545+	5783766345+	4801009347+	2814530648+
51+					1394256545+	2975100645+	3279891947+	1838520648+
52+					6437590044+	1560704045+	2216057947+	1190502548+
53+					3522570044+	7900720744+	1484649647+	7640930347+
54+					2160300044+	3717003344+	9827844546+	4861498047+
55+					1159100044+	1693605244+	6462651946+	3064859547+
56+					4105100043+	8293174243+	4205635446+	1914492847+
57+					2354600043+	3755433643+	2718545446+	1184693947+
58+					1228800043+	1572314143+	1723748246+	7267522146+
59+					6453000042+	6180055342+	1092954646+	4411871146+
60+					1442000042+	3090027742+	6836603545+	2649185546+
61+					8240000041+	1442012942+	4333883045+	1570167246+
62+					4120000041+	6180055341+	2674942545+	9245414545+
63+					2060000041+	2060018441+	1510585045+	5464126645+
64+					2060000041+		9152930044+	3193438945+
65+							5616660044+	1838053445+
66+							3288880044+	1044394445+
67+							1931400044+	5795160444+
68+							1352020044+	3078360844+
69+							5745900043+	1713587144+
70+							3370700043+	9234092343+
71+							2038900043+	4703047043+
72+							1311200043+	2210922143+
73+							7071000042+	1030010343+
74+							2060000042+	5562055642+
75+							1236000042+	2884028842+
76+							6180000041+	1442014441+
77+							4120000041+	6180061841+
78+							2060000041+	2060020641+
79+							2060000041+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~ LOGNORMAL WITH LSUBM = 7.19, V(LSUBX) = 0.10

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	2214547748+	7187939351+	1907731146+	1437587652+	3271780044+	2156389952+	9152000042+	2875181852+
1+	1171972249+	6190154051+	1644827547+	1337589652+	4044068045+	2056390152+	1594560044+	2775182052+
2+	3243309649+	5204088551+	7348528547+	1237607952+	227[illegible]455646+	1956390752+	9850280044+	2675181852+
3+	6251552849+	4250456251+	2284048148+	1137699752+	9051606146+	1856393152+	4795540045+	2575181952+
4+	9432641249+	3359339551+	5535363248+	1038019752+	2777251747+	1756404752+	1708749246+	2475182452+
5+	1187300350+	2562549851+	1115353549+	9388938651+	7069685847+	1656444952+	4997798246+	2375184552+
6+	1297597850+	1884491051+	1943160949+	8408829951+	1554013048+	1556555252+	1265576447+	2275191852+
7+	1265551250+	1336192351+	3010016049+	7448152751+	3033212448+	1456820852+	2853620047+	2175211652+
8+	1123644150+	9144495150+	4227364449+	6517575851+	5357808648+	1357389852+	5816844947+	2075260152+
9+	9220290349+	6050717050+	5464031449+	5629273151+	8693477748+	1258494352+	1088703948+	1975366952+
10+	7075489449+	3878972750+	6576298049+	4795610751+	1310941549+	1160468652+	1891761048+	1875582552+
11+	5126006049+	2414781250+	7439400149+	4027710851+	1854409049+	1063753852+	3080379348+	1775987652+
12+	3533300849+	1463193050+	7970914149+	3334205951+	2479495149+	9688928051+	4735349748+	1676700152+
13+	2332157949+	8649363249+	8140643949+	2720409651+	3153569649+	8765118551+	6917099848+	1577886252+
14+	1482092649+	4998968549+	7967454249+	2188020851+	3835479349+	7872843751+	9650680448+	1479764052+
15+	9110506748+	2830673749+	7507182449+	1735306151+	4481140849+	7018924451+	1291957449+	1382607252+
16+	5438416148+	1573434849+	6836609049+	1357663551+	5048899749+	6209816751+	1666061749+	1286742052+
17+	3163577648+	8600399148+	6038068349+	1048387251+	5504566149+	5451198551+	2076516749+	1192543152+
18+	1798751348+	4630044848+	5187399849+	7994918250+	5824408849+	4747625851+	2508801149+	1100420652+
19+	1001942548+	2458450948+	4346495549+	6024704850+	5996916049+	4102297551+	2945726749+	1010807252+
20+	5486164447+	1288804448+	3560311649+	4489142350+	6022211149+	3516938751+	3369108649+	9241398351+
21+	2955076947+	6677775147+	2856859749+	3309611550+	5910658049+	2991802251+	3761171649+	8408411251+
22+	1567774947+	3422597647+	2249896349+	2415767350+	5680314149+	2525772751+	4106004849+	7613036851+
23+	8227243346+	1735203247+	1741899449+	1746913550+	5354218549+	2116546751+	4390624449+	6858722151+
24+	4262511446+	8705373246+	1327803449+	1252249650+	4957387049+	1760863951+	4605725949+	6148313751+
25+	2188599346+	4321248046+	9978837148+	8903666249+	4514834749+	1454753951+	4745964249+	5483963251+
26+	1101345046+	2125733846+	7402817548+	6282722449+	4049521949+	1193793251+	4810005949+	4867072851+
27+	5590858545+	1031569846+	5427539348+	4402062149+	3581193949+	9733278750+	4800116549+	4298282751+
28+	2723098045+	4964947645+	3936078348+	3064157449+	3125888649+	7886746350+	4721696049+	3777493851+
29+	1391263045+	2337309545+	2826938448+	2119861249+	2695497949+	6352803850+	4582392349+	3303922251+
30+	6487650044+	1100941745+	2011548148+	1458259449+	2298332849+	5088413250+	4391493349+	2876174851+
31+	3073765044+	5133421444+	1419735148+	9978130448+	1939294349+	4053856750+	4159263449+	2492342251+
32+	1530480044+	2331207044+	994831324?+	6793405648+	1620495349+	3213230250+	3896062849+	2150103351+

33+	6675350043+	1059480544+	6919979247+	4603513748+	1341952349+	2534654750+	3611996849+	1846824051+
34+	3477900043+	4552923443+	4783878847+	3105621648+	1101921849+	1990274950+	3316234749+	1579666051+
35+	1426300043+	1988960243+	3288187347+	2086118748+	8978268948+	1556087850+	3017139749+	1345669751+
36+	6303000042+	8513043842+	2247648047+	1395435048+	7261841148+	1211684250+	2721627649+	1141846051+
37+	3005500042+	3439517742+	1529777647+	9295168247+	5834052848+	9398993149+	2435411049+	9652380650+
38+	1150000042+	1371507142+	1035735747+	6165767047+	4657533248+	7264551449+	2162921549+	8129844450+
39+	6145000041+	4535023441+	7000179046+	4072104347+	3696612048+	5595865249+	1907297149+	6823601250+
40+	2060000041+	1500007741+	4689962746+	2678460847+	2917936348+	4296841449+	1670730149+	5708089450+
41+	5250000040+	5250027040+	3136480446+	1753814947+	2291552648+	3289613249+	1454323249+	4759651350+
42+	3750000040+	7500038639+	2093873546+	1142817747+	1791069148+	2511541749+	1258443949+	395664625(+
43+	7500000039+		1384882746+	7412082746+	1393804448+	1912577549+	1082935449+	3279486850+
44+			9141675545+	4780875846+	1080128248+	1452994349+	9269855248+	2710620450+
45+			6063401045+	3063838746+	8340644247+	1101425249+	7896268048+	2234454050+
46+			3943462545+	1953143146+	6416231547+	8332627248+	6694535148+	1837250850+
47+			2567811045+	1236794646+	4919426247+	6292630248+	5651333148+	1506992750+
48+			1675025045+	7772277445+	3759422547+	4744578348+	4750459548+	1233248550+
49+			1074749045+	4851639545+	2866299347+	3572470648+	3978255548+	1007009050+
50+			6840540044+	3005753145+	2178338447+	2686994448+	3318990348+	8205528449+
51+			4426370044+	1843922445+	1652234047+	2019352948+	2759613748+	6672863849+
52+			2728205044+	1124729745+	1248310747+	1516936048+	2286899248+	5416162549+
53+			1718850044+	6783581144+	9418055546+	1139350848+	1889598948+	4388152249+
54+			1092710044+	4038719644+	7102211246+	8559462547+	1556633648+	3549103049+
55+			6548450043+	2386570744+	5333822846+	6435640047+	1279038248+	2865718149+
56+			4027000043+	1389268344+	3992776746+	4845211047+	1048195948+	2310237649+
57+			2516650043+	7946668843+	2991157046+	3654057247+	8569601147+	1859577549+
58+			1443750043+	4517310743+	2234766146+	2762020747+	6990451547+	1494613649+
59+			8596000042+	2531706043+	1668465046+	2093461947+	5690084947+	1199554849+
60+			4796000042+	1405703343+	1242158846+	1591750747+	4622787547+	9613970248+
61+			2889000042+	7593018042+	9268843545+	1214256147+	3748374847+	7694674748+
62+			1675000042+	4018009542+	6918651045+	9294500046+	3034099747+	6150218048+
63+			8805000041+	2118005042+	5171646045+	7138310446+	2450515247+	4909174248+
64+			4610000041+	1098502642+	3881902045+	5499288046+	1977221447+	3913182848+
65+			2685000041+	5400121841+	2907388545+	4248458046+	1593276947+	3114914748+
66+			1275000041+	2700006441+	2197207545+	3288368246+	1281406747+	2475974848+
67+			6750000040+	1275003041+	1669991545+	2548000246+	1029636247+	1965177048+
68+			4500000040+	5250012440+	1281467045+	1974632346+	8268628646+	1557342748+
69+			1500000040+	2250005340+	9809250044+	1529411946+	6623254746+	1232195648+
70+			7500000039+	7500017839+	7603425044+	1182284246+	5302807746+	9732810647+
71+			7500000039+		5934250044+	9111911045+	4239450946+	7673950747+
72+					4676075044+	6994410645+	3388330646+	6039038547+
73+					3657295044+	5344520145+	2700860246+	4742961247+
74+					2885170044+	4060361045+	2150378846+	3716971047+
75+					2273635044+	3064720345+	1712303246+	2906020647+
76+					1800340044+	2296444345+	1360027546+	2266300547+
77+					1403160044+	1708203345+	1080355546+	1762585047+
78+					1093980044+	1260279045+	8556244545+	1366904947+
79+					8478350043+	9217532644+	6774823545+	1056788147+
80+					6551800043+	6801145444+	5336353045+	8144194946+
81+					4973750043+	4797879844+	4211732545+	6254150246+
82+					3760100043+	3413022644+	3305875545+	4785281046+
83+					2813000043+	2404177444+	2592783045+	3647001346+
84+					2090850043+	1676633744+	2032400545+	2768001246+
85+					1522400043+	1158176044+	1578986045+	2092242446+
86+					1102450043+	7919590943+	1226900545+	1574381146+
87+					7901000042+	5359877743+	9485890044+	1179214346+
88+					5613500042+	3590268543+	7316735044+	8789049045+
89+					3892500042+	2382012343+	5633915044+	6517634945+
90+					2707500042+	1563008143+	4288645044+	4809615345+
91+					1852500042+	1014755243+	3260020044+	3530462745+
92+					1260000042+	6517533642+	2463500044+	2577313945+
93+					8325000041+	4147521442+	1858260044+	1870516445+
94+					5475000041+	2610013542+	1396540044+	1349546045+
95+					3600000041+	1620008442+	1032700044+	9682304044+
96+					2325000041+	9900051141+	7640650043+	6901853544+
97+					1500000041+	5925030641+	5652700043+	4885472344+
98+					9750000040+	3450017841+	4146850043+	3434364244+
99+					6000000040+	1950010141+	3000250043+	2397943444+
100+					3750000040+	1050005441+	2188650043+	1661549344+
101+					2250000040+	5250027140+	1549300043+	1144021444+
102+					1500000040+	2250011640+	1101500043+	7814243643+
103+					7500000039+	7500038739+	7867000042+	5289779543+
104+					7500000039+		5476000042+	3552019843+
105+							3887000042+	2361863243+
106+							2605000042+	1560408743+
107+							1795500042+	1019455743+
108+							1237000042+	6580536742+
109+							8135000041+	4203523542+
110+							5810000041+	2640014742+
111+							3375000041+	1657509242+
112+							2325000041+	1012505642+
113+							1575000041+	6000033541+
114+							9750000040+	3450019341+
115+							7500000040+	1875010541+
116+							3000000040+	1050005941+
117+							2250000040+	5250029340+
118+							1500000040+	2250012640+
119+							7500000039+	7500041939+
120+							7500000039+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 8.00, V(LSUBX) = 0.00

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	3350000047+	8000015051+		1600001852+		2399999452+		3200003652+
1+	2684000048+	7000350051+	2000000045+	1500001852+		2299999452+		3100003652+
2+	1073500049+	6003369051+	1400000046+	1400002052+		2199999452+		3000003652+
3+	2862600049+	5017123051+	7700000046+	1300003652+		2099999452+		2900003652+
4+	5725200049+	4059502951+	3070000047+	1200012952+	1000000045+	1999999452+		2800003652+
5+	9160400049+	3159134751+	9830000047+	1100052952+	3000000045+	1899999552+		2700003652+
6+	1221380050+	2350370351+	2622000048+	1000191252+	1000000046+	1799999952+		2600003652+
7+	1395870050+	1663743751+	5994000048+	9005917051+	3400000046+	1700001352+		2500003652+
8+	1395870050+	1116703851+	1198700049+	8015916051+	1030000047+	1600006152+		2400003652+
9+	1240770050+	7092505850+	2131100049+	7037902051+	2750000047+	1500021252+	1000000045+	2300003652+
10+	9926200049+	4258741550+	3409800049+	6081199051+	6600000047+	1400063852+	4000000045+	2200003752+
11+	7219000049+	2417595250+	4959700049+	5158594051+	1439000048+	1300172452+	11000000046+	2100004252+

12+	48127000049+	12983474504+	66129000049+	42855860051+	28780000048+	12004249524+	30000000046+	20000058524+
13+	29616000049+	66036868494+	81389000049+	34787070514+	53140000048+	11009652524+	75000000046+	19000104524+
14+	16924000049+	31854936494+	93016000049+	27532170514+	91090000048+	10020369524+	17200000047+	18000225524+
15+	90260000048+	14596971494+	99218000049+	21207430514+	14575000049+	90401950514+	36600000047+	17000518524+
16+	45130000048+	63649873484+	99218000049+	15874870514+	21862000049+	80745959514+	73200000047+	16001177524+
17+	21240000048+	26459947484+	93381000049+	11534490514+	30864000049+	71308589514+	13770000048+	15002568524+
18+	94400000047+	10509979484+	83006000049+	81279200504+	41152000049+	62179858514+	24490000048+	14005336524+
19+	39700000047+	39999920474+	69899000049+	55514100504+	51982000049+	53462647514+	41240000048+	13010553524+
20+	15900000047+	14599971474+	55920000049+	36738900504+	62378000049+	45265255514+	65990000048+	12019894524+
21+	61000000046+	50999898464+	42605000049+	23555700504+	71289000049+	37691642514+	10055000049+	11035834524+
22+	22000000046+	16999966464+	30986000049+	14633000504+	77770000049+	30830919514+	14625000049+	10061829524+
23+	80000000045+	49999904504+	21555000049+	88089000494+	81152000049+	24747895514+	20348000049+	91024494514+
24+	30000000045+	99999804044+	14376000049+	51403000494+	81152000049+	19476391514+	27131000049+	81634177514+
25+	10000000045+		91970000484+	29087000494+	77905000494+	15016405514+	34728000049+	72515170514+
26+			56600000484+	15968000494+	71913000494+	11335469514+	42742000494+	63743445514+
27+			33540000484+	85090000484+	63922000494+	83736616504+	50657000494+	55399142514+
28+			19160000484+	44040000484+	54791000494+	60510739504+	57894000494+	47561410514+
29+			10570000484+	22150000484+	45344000494+	42763957504+	63883000494+	40302621514+
30+			56400000474+	10830000484+	36275000494+	29551570504+	68142000494+	33682665514+
31+			29100000474+	51500000474+	28084000494+	19966680504+	70340000494+	27744131514+
32+			14600000474+	23800000474+	21063000494+	13190187504+	70340000494+	22509000514+
33+			71000000464+	10700000474+	15319000494+	85199915494+	68209000494+	17977272514+
34+			33000000464+	47000000464+	10813000494+	53816946494+	64196000494+	14127637514+
35+			15000000464+	20000000464+	74150000484+	33246967494+	58694000494+	10919964514+
36+			70000000454+	80000000454+	49430000484+	20091980494+	52172000494+	82992332504+
37+			30000000454+	30000000454+	32060000484+	11879988494+	45122000494+	62002248504+
38+			10000000454+	10000000454+	20250000484+	68739931484+	37998000494+	45524382504+
39+			10000000454+		12460000484+	38929961484+	31177000494+	32846331504+
40+					74800000474+	21579978484+	24942000494+	23285993504+
41+					43800000474+	11709988484+	19467000494+	16219865504+
42+					25000000474+	62199938474+	14832000494+	11100444504+
43+					14000000474+	32299968474+	11038000494+	74642299494+
44+					76000000464+	16399984474+	80270000484+	49318197494+
45+					41000000464+	80999919464+	57080000484+	32021128454+
46+					21000000464+	38999961464+	39710000484+	20432082494+
47+					11000000464+	17999982464+	27040000484+	12814051494+
48+					50000000454+	79999920454+	18020000484+	79000316484+
49+					30000000454+	29999970454+	11770000484+	47880192484+
50+					10000000454+	99999900444+	75300000474+	28530114484+
51+					10000000454+		47300000474+	16710067484+
52+							29100000474+	96200385474+
53+							17600000474+	54400218474+
54+							10400000474+	30200121474+
55+							61000000464+	16400066474+
56+							35000000464+	87000348464+
57+							19000000464+	45000180464+
58+							11000000464+	22000088464+
59+							60000000454+	10000404464+
60+							30000000454+	40000160454+
61+							20000000454+	10000404454+
62+							10000000454+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 8.05, V(LSUBX) = 0.05

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	49015182474+	80531766514+	48781250444+	16106332524+	18000000394+	24159518524+		32212739524+
1+	35429138484+	70536668514+	67011680454+	15106333524+	28557000424+	23159513524+	60000000384+	31212746524+
2+	12974635494+	60576999514+	43434784464+	14106340524+	89497400434+	22159517524+	42000000394+	30212745524+
3+	32115645494+	50747076514+	19752934474+	13106390524+	87565040444+	21159518524+	17232000424+	29212744524+
4+	60438947494+	41238309514+	67533416474+	12106638524+	46401097454+	20159517524+	43074400434+	28212741524+
5+	92229974494+	32333935514+	18745383484+	11107561524+	17302188464+	19159523524+	13660890444+	27212740524+
6+	11886630504+	24351863514+	43805814484+	10110362524+	54986341464+	18159543524+	45497770444+	26212742524+
7+	13306754504+	17558458514+	89004961484+	91175385514+	15397555474+	17159622524+	19936703454+	25212743524+
8+	13207442504+	12095730514+	16024911494+	81336177514+	38174982474+	16159852524+	58669189454+	24212747524+
9+	11805824504+	79537495504+	25971887494+	71657212514+	85132498474+	15160469524+	16744313464+	23212751524+
10+	96218322494+	49923549504+	38361014494+	62237967514+	17291201484+	14161934524+	42198575464+	22212777524+
11+	72214874494+	29931463504+	52151464494+	53202340514+	32311029484+	13165126524+	97495969464+	21212844524+
12+	50323655494+	17160881504+	65795216494+	44688225514+	56013634484+	12171554524+	20813045474+	20213009524+
13+	32784941494+	94226771494+	77564152494+	36832061514+	90712631484+	11183576524+	41595595474+	19213386574+
14+	20085657494+	49629761494+	85941426494+	29751533514+	13802107494+	10204676524+	77984701474+	18214170524+
15+	11630322494+	25118462494+	89950235494+	23530428514+	19830965494+	92395771514+	13795011484+	17215743524+
16+	63925176484+	12237511494+	89320686494+	18208819514+	27023026494+	82943080514+	23145442484+	16218692524+
17+	33481844484+	57490937484+	84472592494+	13780422514+	35057586494+	73760622514+	36955285484+	15223955524+
18+	16768569484+	26088706484+	76342297494+	10196749514+	43445784494+	64928741514+	56359378484+	14232911524+
19+	80498216474+	11455087484+	66130350494+	73764982504+	51587538494+	56531321514+	82327324484+	13247503524+
20+	37210721474+	48713092474+	55055621494+	52175513504+	58847969494+	48649774514+	11551285494+	12270332524+
21+	16577315474+	20086138474+	44157557494+	36091601504+	64649159494+	41356707514+	15604357494+	11304711524+
22+	71166806464+	80365407464+	34196602494+	24423451504+	68547330494+	34710135514+	20339502494+	10354694524+
23+	29762230464+	31036431464+	25620435494+	16174955504+	70287887494+	28749036514+	25631862494+	94250177514+
24+	12113880464+	11469762464+	18604364494+	10488507504+	69825568494+	23490821514+	31285521494+	85209722514+
25+	48095095454+	40170033454+	13115581494+	66624954494+	67316008494+	18930860514+	37045696494+	76482126514+
26+	16714115454+	13737675454+	89903515484+	41480404894+	63075164494+	15044064514+	42623780494+	68124995514+
27+	70323550444+	40194753444+	60006691484+	25326214494+	57522350494+	11788021514+	47716602494+	60194104514+
28+	15567150444+	13336484444+	39047667484+	15172689494+	51124349494+	91072019504+	52043963494+	52740380514+
29+	96700500434+	20454052434+	24806272484+	89239313484+	44334798494+	69376282504+	55369681494+	45807099514+
30+	13178500434+	42440109424+	15398707484+	51558001484+	37556251494+	52114040504+	57526068494+	39427520514+
31+	19705000424+	12125031424+	93502931474+	29275397484+	31109341494+	38607428504+	58425518494+	33623201514+
32+	96000000414+	15150039414+	55649462474+	16343088484+	25222519494+	28211761504+	58064090494+	28403144514+
33+	50500000404+	50500129404+	32441596474+	89757221474+	20035158494+	20338352504+	56516703494+	23763722514+
34+	50500000404+		18528950474+	48525171474+	15604365494+	14468463504+	53922592494+	19689477514+
35+			10404920474+	25822074474+	11927104494+	10159015504+	50471539494+	16154461514+
36+			57351856464+	13523893474+	89525409484+	70422802494+	46379017494+	13124161514+
37+			31186995464+	69608971464+	66040774484+	48208015494+	41870479494+	10557651514+
38+			16578872464+	35166026464+	47912348484+	32597329494+	37161846494+	84098526504+
39+			90125600454+	17301956464+	34207720484+	21777891494+	32445253494+	66336716504+
40+			44359450454+	84504415454+	24050143484+	14379230494+	27883851494+	51819453504+
41+			22172325454+	40348750454+	16657941484+	93855896484+	23601143494+	40090582504+
42+			12194055454+	18365410454+	11370171484+	60577487484+	19684634494+	30721840504+
43+			51046500444+	85761250444+	76586362474+	38669279484+	16187003494+	23321568504+
44+			23319250444+	38914900444+	50870659474+	24419735484+	13129449494+	17540003504+
45+			14957400444+	15387800444+	33394052474+	15257264484+	10509874494+	13071389504+
46+			46507500434+	68181000434+	21625780474+	94342058474+	83059631484+	96537721494+
47+			19797000434+	28991500434+	13850821474+	57737332474+	64839796484+	70667524494+
48+			13784500434+	95990000424+	87411167464+	34983467474+	50008421484+	51281336494+

49+	31830000042+	39910000042+	5485416346+	2097073647+	3813143948+	3689601949+
50+	12125000042+	15660000042+	3384416646+	1244344047+	2874961348+	2632385849+
51+	10105000042+	13535000041+	2091507846+	7900565946+	2144283648+	1862667349+
52+	10100000041+	13515000041+	1241225246+	4249206746+	1582562548+	1307378549+
53+	50500000040+	50500000040+	7431583545+	2439075946+	1156370848+	9103463048+
54+	50500000040+		4587202545+	1372105446+	8363957047+	6289519248+
55+			2690728045+	7638562145+	5994919747+	4311974848+
56+			1452996045+	4246807245+	4255759647+	2933925348+
57+			8665905044+	2308052145+	2992460047+	1981453648+
58+			4930685044+	1235889845+	2088567847+	1328229248+
59+			2817360044+	6567972344+	1444056847+	8838628947+
60+			1291305044+	3594414544+	9906055446+	5839027547+
61+			7570100043+	19121650444+	6742701846+	3830036847+
62+			4217000043+	9869276043+	4555566246+	2495319147+
63+			2323200043+	4833912743+	3024597446+	1616160147+
64+			1666400043+	2121755643+	2008080846+	1039462547+
65+			4900500042+	1076002843+	1329931946+	6635738146+
66+			26270000042+	5203013742+	8656554045+	4206789546+
67+			1414500042+	2273006042+	5623158545+	2643500246+
68+			1111500042+	7575019941+	3763083545+	1642529446+
69+			2020000041+	3535009341+	2306441545+	1017868746+
70+			1010000041+	1515004041+	1473149045+	6238531745+
71+			5050000040+	5050013340+	9427805044+	3771533745+
72+			5050000040+		6153505044+	2247320545+
73+					3753795044+	1338460845+
74+					2053435044+	8049827444+
75+					1301470044+	4768482344+
76+					7717300043+	2788618144+
77+					5010100043+	1580487444+
78+					2939500043+	8733690943+
79+					2126100043+	4602021543+
80+					8083000042+	2596462243+
81+					5304500042+	1399206543+
82+					2930000042+	7324034342+
83+					1667000042+	3586016842+
84+					1313500042+	1515007142+
85+					3535000041+	7575035541+
86+					2020000041+	3535016541+
87+					1010000041+	1515007141+
88+					5050000040+	5050023640+
89+					5050000040+	

PL DSUBX~POISSON WITH DSUBM = 1, 2, 3, 4 : LSUBX~LOGNORMAL WITH LSUBM = 8.21, V(LSUBX) = 0.10

QSUBX	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM	P(QSUBX)	SSUBM
0	10398898486+	82146369516+	54943769456+	16429267526+	57199700436+	24644576526+	10588000426+	32858595526+
1+	61062824486+	72156768516+	52112282466+	15429271526+	86341590446+	23644577526+	24893000436+	31858595756+
2+	18717176496+	62228232516+	25432772476+	14429331526+	53297170456+	22644578526+	16007760446+	30858597526+
3+	39901800496+	52486872516+	86446163476+	13429639526+	23258084466+	21644584526+	90200320446+	29858593526+
4+	66495221496+	43144537516+	22849124486+	12430817526+	77500340466+	20644613526+	35207491456+	28858597526+
5+	92322423496+	34467170516+	50145870486+	11434276526+	21327808476+	19644722526+	10988748466+	27858597526+
6+	11115829506+	26713048516+	94985289486+	10442754526+	50596794476+	18645040526+	29800434466+	26858611526+
7+	11929668506+	20070535516+	15979426496+	94607300516+	10649478486+	17645865526+	72344749466+	25858663526+
8+	11642195506+	14621014516+	24342182496+	84946845516+	20257328486+	16647757526+	15807082476+	24858775516+
9+	10489000506+	10335741516+	34086283496+	75529820516+	35351058486+	15651676526+	31693353476+	23859054526+
10+	88281196496+	70993896506+	44394771496+	66453657516+	57267223486+	14659125526+	58882534476+	22859641526+
11+	70074836496+	47458705506+	54287104496+	57821457516+	86928415486+	13672309526+	10239599486+	21860828526+
12+	52867939496+	30931153506+	62808403496+	49732135516+	12459004496+	12692087486+	16790687486+	20863029526+
13+	38155925496+	19690514506+	69195285496+	42270913516+	16968737496+	11728510526+	26142002486+	19866922526+
14+	26487325496+	12265551506+	72981643496+	35501659516+	22078181496+	10779810526+	38837669486+	18873419526+
15+	17767860496+	74893812496+	74033410496+	29462235516+	27569295496+	98531887516+	55310382486+	17883797526+
16+	11563118496+	44900379496+	72516406496+	24163153516+	33169066496+	89541379516+	75811427486+	16899716526+
17+	73258774486+	26470321496+	68823396496+	19589255516+	38581642496+	80882565516+	10033840496+	15923214526+
18+	45320398486+	15366303496+	63479994496+	15703606516+	43517299496+	72609583516+	12862426496+	14956739526+
19+	27444463486+	87944303486+	57054196496+	12452768516+	47723504496+	64771777516+	16011060496+	14003126526+
20+	16311674486+	49670639486+	50085941496+	97724882506+	51003710496+	57411220516+	19399181496+	13065535526+
21+	95300593476+	27709019486+	43035025496+	75930740506+	53232846496+	50560715516+	22925278496+	12147337526+
22+	54819094476+	15277669486+	36260349496+	58440192506+	54359856496+	44242540516+	26474053496+	11252067526+
23+	31107054476+	83283532476+	30010069496+	44575750506+	54404286496+	38467983516+	29925221496+	10383269526+
24+	17424149476+	44898119476+	24433966496+	33712379506+	53443869496+	33237480516+	33160463496+	95444000516+
25+	96483554466+	23937244476+	19597601496+	25292449506+	51603352496+	28541427516+	36071783496+	87386914516+
26+	52642579466+	12624944476+	15503730496+	18832318506+	49036642496+	24361415516+	38567453496+	79690550516+
27+	28593577466+	65770189466+	12111463496+	13922596506+	45911155496+	20671786516+	40576874496+	72379862516+
28+	15192454466+	33885158466+	93520744486+	10224040506+	42396942496+	17441279516+	42053527496+	65474962516+
29+	81503070456+	17192925466+	71453323486+	74607112496+	38652516496+	14634749516+	42973727496+	58990604516+
30+	41885825456+	86511776456+	54055805486+	54119301496+	34820767496+	12214757516+	43337904496+	52935992516+
31+	21499540456+	42981094456+	40528948486+	39037182496+	31021751496+	10143978516+	43167304496+	47314771516+
32+	11200170456+	20950435456+	30139813486+	28008040496+	27351846496+	83814205506+	42500825496+	42125234516+
33+	54466950446+	10120197456+	22241256486+	19992938496+	23884258496+	68933897506+	41390311496+	37360709516+
34+	28576650446+	47367763446+	16296333486+	14202008496+	20668034496+	56442062506+	39896194496+	33010110516+
35+	13255650446+	22110846446+	11864752486+	10040704496+	17735054496+	46017085506+	38086775496+	29058470516+
36+	63452000436+	10109877446+	85857412476+	70659775486+	15098351496+	37365645506+	36029696496+	25487712516+
37+	31230000436+	44542500436+	61791826476+	49498039486+	12759252496+	30224077506+	33792822496+	22277261516+
38+	13646500436+	19220931436+	44230685476+	34515602486+	10708504496+	24358456506+	31439887496+	19404741516+
39+	70610000426+	75461693426+	31528611476+	23956333486+	89296226486+	19563720506+	29028223496+	16846634516+
40+	28265000426+	29325658426+	22340440476+	16549978486+	74014076486+	15661961506+	26609957496+	14578811516+
41+	98300000416+	11455257426+	15766868476+	11377717486+	61001270486+	12500355506+	24227888496+	12577096516+
42+	56000000416+	34150766416+	11083203476+	77821763476+	50008565486+	99487816496+	21917782496+	10817666516+
43+	17900000416+	97502188406+	77452105466+	52949763476+	40795069486+	78973037496+	19708370496+	92774181506+
44+	32500000406+	32500729406+	53909050466+	35823135476+	33123523486+	62537851496+	17620131496+	79342585506+
45+	32500000406+		37470630466+	24087522476+	26778709486+	49415097496+	15668463496+	67673041506+
46+			25775301466+	16099043476+	21558590486+	38970270496+	13861538496+	57570380506+
47+			17678263466+	10688145476+	17288971486+	30681350496+	12204086496+	48853912506+
48+			12081724466+	70451124466+	13812651486+	24121363496+	10695208496+	41357878506+
49+			81849750456+	46102756466+	10999140486+	18942675496+	93328077486+	34931381506+
50+			54989370456+	29939531466+	87289818476+	14863926496+	81103977486+	29438202506+
51+			37043925456+	19275351466+	69062189476+	11658094496+	70208236486+	24756074506+
52+			24367280456+	12315639466+	54458890476+	91429022486+	60552927486+	20776042506+
53+			16095190456+	77927021456+	42832417476+	71723095486+	52045700486+	17401557506+
54+			10620190456+	48793189456+	33624151476+	56300497486+	44584159486+	14547538506+
55+			68071500446+	30279760456+	26311374476+	44240393486+	38075611486+	12139372506+
56+			43848050446+	18573619456+	20537397476+	34811488486+	32420460486+	10111976506+
57+			28247300446+	11252372456+	16017335476+	27436365486+	27527876486+	84087885496+
58+			17496950446+	67559112446+	12471519476+	21663011486+	23313139486+	69808866496+

59+	10922250 44+	40091808 44+	97061587 46+	17136841 48+	19693199 48+	57861211 49+
60+	65974000 43+	23546975 44+	75504075 46+	13581304 48+	16596999 48+	47882930 49+
61+	40948000 43+	13599674 44+	58827695 46+	10780830 48+	13954950 48+	39564379 49+
62+	24829000 43+	77472562 43+	45923784 46+	85686420 47+	11709099 48+	32641362 49+
63+	14347000 43+	43777883 43+	35955075 46+	68157034 47+	98031652 47+	26889284 49+
64+	82225000 42+	24430493 43+	28269088 46+	54223235 47+	81934358 47+	22117541 49+
65+	50455000 42+	13305768 43+	22289134 46+	43116405 47+	68360583 47+	18165157 49+
66+	26655000 42+	72266457 42+	17689636 46+	34238544 47+	56923986 47+	14896402 49+
67+	15035000 42+	38130769 42+	14112758 46+	27129683 47+	47333572 47+	12196899 49+
68+	93400000 41+	19030384 42+	11329657 46+	21432128 47+	39305545 47+	99707419 48+
69+	45550000 41+	92701869 41+	91039750 45+	16867566 47+	32578363 47+	81376495 48+
70+	24400000 41+	40650820 41+	73555115 45+	13213417 47+	26969208 47+	66303484 48+
71+	17900000 41+	13000262 41+	59557140 45+	10294839 47+	22290697 47+	53927454 48+
72+	65000000 40+	32500655 40+	48335315 45+	79718457 46+	18406797 47+	43780544 48+
73+	32500000 40+		39010225 45+	61322163 46+	15169801 47+	35473654 48+
74+			31477995 45+	46826982 46+	12487754 47+	28685197 48+
75+			25274370 45+	35479668 46+	10271400 47+	23144833 48+
76+			20238610 45+	26659850 46+	84325092 46+	18631635 48+
77+			16008975 45+	19863936 46+	69178591 46+	14961705 48+
78+			12589260 45+	14668958 46+	56635521 46+	11983577 48+
79+			98157550 44+	10732930 46+	46317670 46+	95718205 47+
80+			75991550 44+	77785003 45+	37776535 46+	76232499 47+
81+			57979500 44+	55840047 45+	30802948 46+	60524539 47+
82+			43888500 44+	39693172 45+	25030792 46+	47896944 47+
83+			32849900 44+	27935244 45+	20314097 46+	37772484 47+
84+			24369100 44+	19462380 45+	16462691 46+	29679485 47+
85+			17776100 44+	13426480 45+	13275933 46+	23232792 47+
86+			12859800 44+	91682298 44+	10690447 46+	18113730 47+
87+			92040500 43+	61959884 44+	85773930 45+	14063729 47+
88+			65208000 43+	41441726 44+	68643850 45+	10871493 47+
89+			45291000 43+	27444513 44+	54788050 45+	83657072 46+
90+			31416500 43+	17976502 44+	43446505 45+	64078170 46+
91+			21453000 43+	11650210 44+	34346680 45+	48844019 46+
92+			14527000 43+	74692669 43+	27028165 45+	37044619 46+
93+			96315000 42+	47410559 43+	21206255 45+	27948097 46+
94+			63070000 42+	29760165 43+	16564235 45+	20972250 46+
95+			41395000 42+	18416911 43+	12821880 45+	15652866 46+
96+			26565000 42+	11213251 43+	98955000 44+	11615700 46+
97+			17275000 42+	66661489 42+	76142700 44+	85681047 45+
98+			11245000 42+	38465859 42+	58203950 44+	62819566 45+
99+			68450000 41+	21515481 42+	44084500 44+	45778617 45+
100+			44000000 41+	11410255 42+	33383900 44+	33146221 45+
101+			24450000 41+	57051275 41+	24918000 44+	23852294 45+
102+			16300000 41+	24450546 41+	18543800 44+	17050224 45+
103+			81500000 40+	81501821 40+	13778850 44+	12102578 45+
104+			81500000 40+		10090100 44+	85328498 44+
105+					74122000 43+	59721549 44+
106+					53180000 43+	41526973 44+
107+					38350000 43+	28650521 44+
108+					27518000 43+	19609159 44+
109+					19335500 43+	13319662 44+
110+					13914000 43+	89637599 43+
111+					93150000 42+	59992905 43+
112+					65590000 42+	39663429 43+
113+					45840000 42+	25893106 43+
114+					30970000 42+	16706891 43+
115+					22025000 42+	10617749 43+
116+					13010000 42+	67311576 42+
117+					92700000 41+	41455971 42+
118+					61800000 41+	24870582 42+
119+					40650000 41+	14465339 42+
120+					27650000 41+	81251903 41+
121+					13000000 41+	45501066 41+
122+					97500000 40+	22750533 41+
123+					65000000 40+	97502284 40+
124+					32500000 40+	32500761 40+
125+					32500000 40+	

APPENDIX C

TOTAL COST SURFACES

APPENDIX C-1

INPUT PARAMETERS AND COSTS

PROCUREMENT SOURCE 1

Distribution Identification Card

Word 1 - 0000001000 - demand distribution identification

Word 2 - 1000000051 - a constant

Word 3 - 2000000051 - a constant

Word 4 - 3000000051 - a constant

Word 5 - 4000000051 - a constant

Word 6 - 0000002000 - lead time distribution identification

Word 7 - 8050000051 - lead time distribution mean

Word 8 - 5000000049 - log lead time distribution variance

Cost Card

Word 1 - 1000000051 - demand distribution mean

Word 2 - 0000000000 - a constant

Word 3 - 9999999999 - a constant

Word 4 - 0000000000 - a constant

Word 5 - 0000000000 - a constant

Word 6 - 2500000051 - procurement cost

Word 7 - 7000000048 - holding cost

Word 8 - 2000000051 - shortage cost

Price Break Card

Word 1 - 1200000052 - break 1

Word 2 - 2400000052 - break 2

Word 3 - 3600000052 - break 3

Word 4 - 4800000052 - break 4

Word 5 - 6000000052 - break 5

Word 6 - 7200000052 - break 6

Word 7 - 8400000052 - break 7

Word 8 - 9999999999 - break 8

Item Cost Card

Word 1 - 4000000051 - item cost break 1

Word 2 - 3900000051 - item cost break 2

Word 3 - 3800000051 - item cost break 3

Word 4 - 3700000051 - item cost break 4

Word 5 - 3600000051 - item cost break 5

Word 6 - 3500000051 - item cost break 6

Word 7 - 3400000051 - item cost break 7

Word 8 - 3300000051 - item cost break 8

PROCUREMENT SOURCE 2

Distribution Identification Card

Word 1 - 0000001000 - demand distribution identification

Word 2 - 1000000051 - a constant

Word 3 - 2000000051 - a constant

Word 4 - 3000000051 - a constant

Word 5 - 4000000051 - a constant

Word 6 - 0000002000 - lead time distribution identification

Word 7 - 7190000051 - lead time distribution mean

Word 8 - 1000000050 - log lead time distribution variance

Cost Card

Word 1 - 1000000051 - demand distribution mean

Word 2 - 0000000000 - a constant

Word 3 - 9999999999 - a constant

Word 4 - 0000000000 - a constant

Word 5 - 0000000000 - a constant

Word 6 - 2300000051 - procurement cost

Word 7 - 7000000048 - holding cost

Word 8 - 2000000051 - shortage cost

Price Break Card

Word 1 - 9999999999 - break 1

Word 2 - 0000000000 - a constant

Word 3 - 0000000000 - a constant

Word 4 - 0000000000 - a constant

Word 5 - 0000000000 - a constant

Word 6 - 0000000000 - a constant

Word 7 - 0000000000 - a constant

Word 8 - 0000000000 - a constant

Item Cost Card

Word 1 - 4000000051 - item cost break 1

Word 2 - 0000000000 - a constant

Word 3 - 0000000000 - a constant

Word 4 - 0000000000 - a constant

Word 5 - 0000000000 - a constant

Word 6 - 0000000000 - a constant

Word 7 - 0000000000 - a constant

Word 8 - 0000000000 - a constant

PROCUREMENT SOURCE 3

Distribution Identification Card

Word 1 - 0000001000 - demand distribution identification

Word 2 - 1000000051 - a constant

Word 3 - 2000000051 - a constant

Word 4 - 3000000051 - a constant

Word 5 - 4000000051 - a constant

Word 6 - 0000002000 - lead time distribution identification

Word 7 - 6000000051 - lead time distribution mean

Word 8 - 0000000000 - log lead time distribution variance

Cost Card

Word 1 - 1000000051 - demand distribution mean

Word 2 - 0000000000 - a constant

Word 3 - 9999999999 - a constant

Word 4 - 0000000000 - a constant

Word 5 - 9999999999 - a constant

Word 6 - 6000000051 - procurement cost

Word 7 - 7000000048 - holding cost

Word 8 - 2000000051 - shortage cost

Manufacturing Progress Card

Word 1 - 8000000050 - manufacturing progress factor

Word 2 - 3219280450 - log Φ/log 2 (minus sign)

Word 3 - 0000000000 - a constant

Word 4 - 1100000051 - initial hours

Word 5 - 0000000000 - previous units

Word 6 - 1800000051 - labor rate

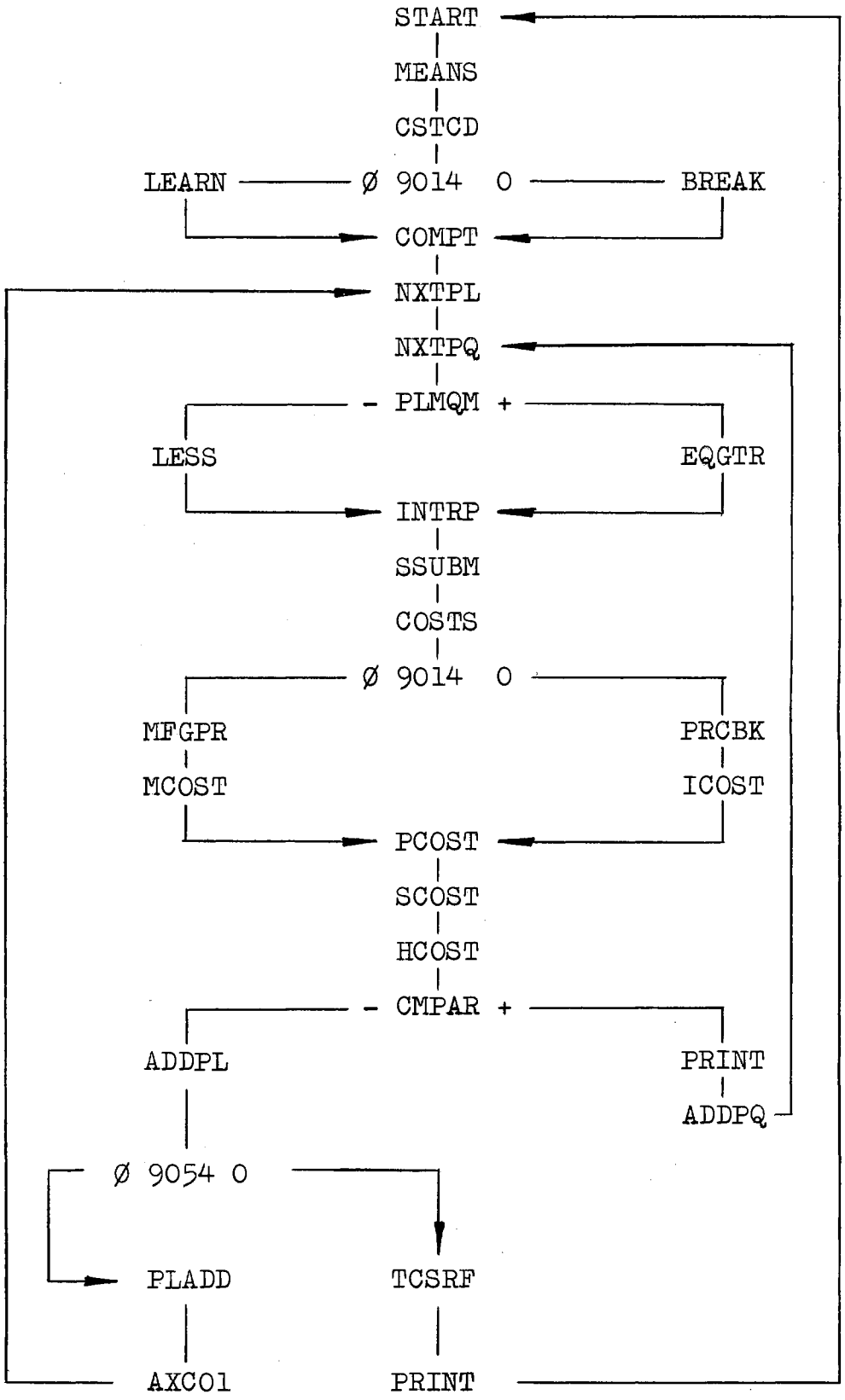
Word 7 - 2400000051 - direct material

Word 8 - 1000000051 - factory burden rate

APPENDIX C-2

ALL TOTAL COST POINTS PROGRAM

ALL TOTAL COST POINTS PROGRAM DIAGRAM



ALL TOTAL COST POINTS PROGRAM

```
 1                                          BLR   0000      0300
 2                                          BLR   0600      1999
 3                                          SYN   START     0301
 4  0301   88 0000 0307          START      RAC   0000
 5  0307   82 0000 0313                     RAB   0000      NXTCD
 6  0313   80 0000 0319          NXTCD      RAA   0000
 7  0319   70 9000 0369                     RCD   9000
 8  0369   65 9000 0327                     RAL   9000
 9  0327   46 0330 0331                     BMI   CSTCD     MEANS
10  0331   69 9001 0337          MEANS      LDD   9001
11  0337   24 4600 0303                     STD   0600 B
12  0303   69 9003 0309                     LDD   9003
13  0309   24 5000 0353                     STD   1000 B
14  0353   69 9005 0359                     LDD   9005
15  0359   24 5400 0403                     STD   1400 B
16  0403   69 9007 0409                     LDD   9007
17  0409   24 5800 0453                     STD   1800 B
18  0453   52 0001 0313                     AXB   0001      NXTCD
19  0330   70 9010 0380          CSTCD      RCD   9010
20  0380   65 9014 0387                     RAL   9014
21  0387   45 0340 0341                     NZE   LEARN     BREAK
22  0340   70 9020 0390          LEARN      RCD   9020      COMPT
23  0341   70 9020 0391          BREAK      RCD   9020
24  0391   70 9030 0390                     RCD   9030      COMPT
25  0390   69 9011 0346          COMPT      LDD   9011
26  0346   24 9050 0302                     STD   9050      NXTPL
27  0302   69 9012 0308          NXTPL      LDD   9012
28  0308   24 0311 0314                     STD   CMPAR
29  0314   69 9001 0320                     LDD   9001
30  0320   24 9051 0326                     STD   9051      NXTPQ
31  0326   60 9010 0333          NXTPQ      RAU   9010
32  0333   39 9006 0336                     FMP   9006
33  0336   21 0440 0343                     STU   QSUBM
34  0343   60 9050 0351                     RAU   9050      PLMQM
35  0351   33 0440 0317          PLMQM      FSB   QSUBM
36  0317   46 0370 0321                     BMI   LESS      EQGTR
37  0321   60 9051 0329          EQGTR      RAU   9051
38  0329   34 9010 0332                     FDV   9010
39  0332   21 9052 0339                     STU   9052
40  0339   60 9051 0347                     RAU   9051
41  0347   34 9002 0350                     FDV   9002
42  0350   32 9050 0379                     FAD   9050
43  0379   33 0440 0367                     FSB   QSUBM
44  0367   39 9052 0420                     FMP   9052
45  0420   21 9053 0377                     STU   9053      INTRP
46  0370   60 9051 0427          LESS       RAU   9051
47  0427   34 9010 0430                     FDV   9010
48  0430   21 9052 0437                     STU   9052
49  0437   60 9050 0345                     RAU   9050
50  0345   32 9051 0325                     FAD   9051
51  0325   33 0440 0417                     FSB   QSUBM
```

```
 52 0417   46 0470 0371            BMI          PLUS
 53 0470   69 9013 0376            LDD   9013
 54 0376   24 9053 0377            STD   9053   INTRP
 55 0371   39 8003 0375   PLUS     FMP   8003
 56 0375   34 9010 0328            FDV   9010
 57 0328   34 9002 0381            FDV   9002
 58 0381   21 9053 0377            STU   9053   INTRP
 59 0377   60 9010 0335   INTRP    RAU   9010
 60 0335   33 9001 0315            FSB   9001
 61 0315   45 0318 0419            NZE          SSUB1
 62 0318   33 9001 0397            FSB   9001
 63 0397   46 0400 0401            BMI          TEST2
 64 0400   32 9001 0429            FAD   9001
 65 0429   21 0334 0487            STU   DIFF   1AND2
 66 0401   60 9010 0459   TEST2    RAU   9010
 67 0459   33 9002 0389            FSB   9002
 68 0389   45 0342 0393            NZE          SSUB2
 69 0342   33 9001 0421            FSB   9001
 70 0421   46 0324 0425            BMI          TEST3
 71 0324   32 9001 0503            FAD   9001
 72 0503   21 0334 0537            STU   DIFF   2AND3
 73 0425   60 9010 0383   TEST3    RAU   9010
 74 0383   33 9003 0363            FSB   9003
 75 0363   45 0316 0467            NZE          SSUB3
 76 0316   33 9001 0395            FSB   9001
 77 0395   46 0348 0349            BMI          SSUB4
 78 0348   32 9001 0477            FAD   9001
 79 0477   21 0334 0587            STU   DIFF   3AND4
 80 0419   60 6600 0305   SSUB1    RAU   0600 C SSUBM
 81 0393   60 7000 0305   SSUB2    RAU   1000 C SSUBM
 82 0467   60 7400 0305   SSUB3    RAU   1400 C SSUBM
 83 0349   60 7800 0305   SSUB4    RAU   1800 C SSUBM
 84 0487   60 6600 0355   1AND2    RAU   0600 C
 85 0355   21 0310 0413            STU   TEMP
 86 0413   60 7000 0405            RAU   1000 C
 87 0405   33 0310 0338            FSB   TEMP
 88 0338   39 0334 0384            FMP   DIFF
 89 0384   32 0310 0305            FAD   TEMP   SSUBM
 90 0537   60 7000 0455   2AND3    RAU   1000 C
 91 0455   21 0310 0463            STU   TEMP
 92 0463   60 7400 0505            RAU   1400 C
 93 0505   33 0310 0388            FSB   TEMP
 94 0388   39 0334 0434            FMP   DIFF
 95 0434   32 0310 0305            FAD   TEMP   SSUBM
 96 0587   60 7400 0555   3AND4    RAU   1400 C
 97 0555   21 0310 0513            STU   TEMP
 98 0513   60 7800 0306            RAU   1800 C
 99 0306   33 0310 0438            FSB   TEMP
100 0438   39 0334 0484            FMP   DIFF
101 0484   32 0310 0305            FAD   TEMP   SSUBM
102 0305   21 9054 0563   SSUBM    STU   9054   COSTS
103 0563   65 9014 0471   COSTS    RAL   9014
104 0471   45 0374 0475            NZE   MFGPR  PRCBK
105 0475   80 0000 0431   PRCBK    RAA   0000   NEXT
```

```
106 0431   60 9220 0439        NEXT   RAU   9020 A
107 0439   33 9051 0469               FSB   9051
108 0469   46 0322 0323               BMI   NXTBK    ICOST
109 0322   50 0001 0431        NXTBK  AXA   0001     NEXT
110 0323   60 9230 0481        ICOST  RAU   9030 A
111 0481   39 9010 0534               FMP   9010
112 0534   21 9055 0441               STU   9055
113 0441   21 9059 0399               STU   9059     PCOST
114 0374   80 0000 0480        MFGPR  RAA   0000
115 0480   60 9024 0488               RAU   9024
116 0488   32 9051 0517               FAD   9051
117 0517   69 0520 0201               LDD             0201
118 0520   39 9021 0373               FMP   9021
119 0373   69 0426 0000               LDD             0000
120 0426   39 9023 0479               FMP   9023
121 0479   32 9022 0509               FAD   9022
122 0509   21 9022 0567               STU   9022
123 0567   34 9051 0570               FDV   9051     MCOST
124 0570   21 0424 0527        MCOST  STU   HOURS
125 0527   39 9025 0530               FMP   9025
126 0530   21 0584 0538               STU   LCOST
127 0538   60 0424 0529               RAU   HOURS
128 0529   39 9025 0382               FMP   9025
129 0382   39 9027 0385               FMP   9027
130 0385   32 0584 0361               FAD   LCOST
131 0361   32 9026 0491               FAD   9026
132 0491   39 9010 0344               FMP   9010
133 0344   21 9055 0451               STU   9055
134 0451   21 9059 0399               STU   9059     PCOST
135 0399   60 9015 0357        PCOST  RAU   9015
136 0357   34 9052 0360               FDV   9052
137 0360   21 9056 0368               STU   9056
138 0368   32 9059 0447               FAD   9059
139 0447   21 9059 0356               STU   9059     SCOST
140 0356   60 9054 0364        SCOST  RAU   9054
141 0364   39 9017 0418               FMP   9017
142 0418   34 9052 0521               FDV   9052
143 0521   21 9058 0579               STU   9058
144 0579   32 9059 0559               FAD   9059
145 0559   21 9059 0468               STU   9059     HCOST
146 0468   60 9055 0525        HCOST  RAU   9055
147 0525   34 9010 0378               FDV   9010
148 0378   39 9053 0531               FMP   9053
149 0531   39 9016 0435               FMP   9016
150 0435   34 9052 0588               FDV   9052
151 0588   21 9057 0445               STU   9057
152 0445   32 9059 0575               FAD   9059
153 0575   21 9059 0433               STU   9059     PRINT
154 0433   74 9050 0483        PRINT  WR2   9050
155 0483   60 0311 0365               RAU   CMPAR
156 0365   33 9059 0495               FSB   9059
157 0495   46 0398 0449               BMI   ADDPL    ADDPQ
158 0449   69 9059 0406        ADDPQ  LDD   9059
159 0406   24 0311 0414               STD   CMPAR
```

```
160 0414   60 9051 0571                RAU   9051
161 0571   32 9001 0501                FAD   9001
162 0501   21 9051 0326                STU   9051     NXTPQ
163 0398   60 9054 0456      ADDPL     RAU   9054
164 0456   45 0410 0411                NZE           TCSRF
165 0410   60 9014 0518                RAU   9014
166 0518   45 0372 0423                NZE           PLADD
167 0372   69 9013 0428                LDD   9013
168 0428   24 9022 0423                STD   9022     PLADD
169 0423   60 9050 0581      PLADD     RAU   9050
170 0581   32 9001 0461                FAD   9001
171 0461   21 9050 0519                STU   9050     AXC01
172 0519   58 0001 0302      AXC01     AXC   0001     NXTPL
173 0411   27 9050 0366      TCSRF     SET   9050
174 0366   08 0760 0422                LIB   0760
175 0422   74 9050 0301                WR2   9050     START
```

APPENDIX C-3

OUTPUT SURFACES

OUTPUT SURFACE - SOURCE 1

PL	PQ	PF	TS	SSUBM	IC	FC	EC	SC	TC
	1000000051+	1000000051+		8053176651+	4000000051+	2500000051+		1610635352+	2260635352+
	2000000051+	2000000051+		8053176651+	4000000051+	1250000051+		8053176551+	1230317752+
	3000000051+	3000000051+		8053176651+	4000000051+	8333333350+		5368764351+	1020211852+
	4000000051+	4000000051+		8053176651+	4000000051+	6250000050+		4026588351+	8651588351+
	5000000051+	5000000051+		8053176651+	4000000051+	5000000050+		3221270651+	7721270651+
	6000000051+	6000000051+		8053176651+	4000000051+	4166666750+		2684392251+	7101058951+
	7000000051+	7000000051+		8053176651+	4000000051+	3571428650+		2300907651+	6658050551+
	8000000051+	8000000051+		8053176651+	4000000051+	3125000050+		2013294151+	6325794151+
	9000000051+	9000000051+	4482561250+	8053176651+	4000000051+	2777777850+	1394574748+	1789594851+	6068767251+
	1000000052+	1000000052+	1895098951+	8053176651+	4000000051+	2500000050+	5306276948+	1610635351+	5865941651+
	1100000052+	1100000052+	4341941951+	8053176651+	4000000051+	2272727350+	1105221649+	1464213951+	5702538851+
	1200000052+	1200000052+	7788785051+	8053176651+	4000000051+	2083333350+	1817383249+	1342196151+	5568703251+
	1300000052+	1300000052+	1223562852+	8053176651+	3900000051+	1923076950+	2569481849+	1238950251+	5356952751+
	1400000052+	1400000052+	1768247152+	8053176651+	3900000051+	1785714350+	3448081949+	1150453851+	5263506051+
	1500000052+	1500000052+	2412931452+	8053176651+	3900000051+	1666666750+	4391535249+	1073756951+	5184339051+
	1600000052+	1600000052+	3157615752+	8053176651+	3900000051+	1562500050+	5387681749+	1006647151+	5116773951+
	1700000052+	1700000052+	4002300052+	8053176651+	3900000051+	1470588250+	6427222949+	9474325350+	5058763551+
	1800000052+	1800000052+	4946984352+	8053176651+	3900000051+	1388888950+	7502926149+	8947973950+	5008715651+
	1900000052+	1900000052+	5991668552+	8053176651+	3900000051+	1315789550+	8609081649+	8477027950+	4965372651+
	2000000052+	2000000052+	7136353052+	8053176651+	3900000051+	1250000050+	9741122049+	8053176550+	4927728951+
	2100000052+	2100000052+	8381037052+	8053176651+	3900000051+	1190476250+	1089534850+	7669691950+	4894970351+
	2200000052+	2200000052+	9725721552+	8053176651+	3900000051+	1136363650+	1206873650+	7321069550+	4866430851+
	2300000052+	2300000052+	1117040653+	8053176651+	3900000051+	1086956550+	1325878650+	7002762250+	4841557851+
	2400000052+	2400000052+	1271509053+	8053176651+	3900000051+	1041666750+	1446341550+	6710980450+	4819898951+
	2500000052+	2500000052+	1435977553+	8053176651+	3800000051+	1000000050+	1527880150+	6442541250+	4697042151+
	2600000052+	2600000052+	1610445953+	8053176651+	3800000051+	9615384649+	1647610050+	6194751250+	4680389951+
	2700000052+	2700000052+	1794914353+	8053176651+	3800000051+	9259259349+	1768323050+	5965315950+	4665956551+
	2800000052+	2800000052+	1989382853+	8053176651+	3800000051+	8928571449+	1889913650+	5752268950+	4653504051+
	2900000052+	2900000052+	2193851253+	8053176651+	3800000051+	8620689749+	2012291150+	5553914850+	4642827551+
	3000000052+	3000000052+	2408319653+	8053176651+	3800000051+	8333333349+	2135376750+	5368784350+	4633749451+
	3100000052+	3100000052+	2632788053+	8053176651+	3800000051+	8064516149+	2259101950+	5195597750+	4626115251+
	3200000052+	3200000052+	2867256553+	8053176651+	3800000051+	7812500049+	2383407050+	5033235350+	4619789251+
	3300000052+	3300000052+	3111724953+	8053176651+	3800000051+	7575757649+	2508238950+	4880713050+	4614652851+
	3400000052+	3400000052+	3366193353+	8053176651+	3800000051+	7352941249+	2633551350+	4737162650+	4610600851+
	3500000052+	3500000052+	3630661853+	8053176651+	3800000051+	7142857149+	2759303050+	4601815150+	4607540451+
	3600000052+	3600000052+	3905130253+	8053176651+	3800000051+	6944444449+	2885457550+	4473986950+	4605388951+
	3700000052+	3700000052+	4189598653+	8053176651+	3700000051+	6756756849+	2932719250+	4353068450+	4496146351+
	3800000052+	3800000052+	4484067153+	8053176651+	3700000051+	6578947449+	3056245850+	4238513950+	4495265551+
	3900000052+	3900000052+	4788535553+	8053176651+	3700000051+	6410256449+	3180078750+	4129834150+	4495093951+
	4000000052+	4000000052+	5103004053+	8053176651+	3700000051+	6250000049+	3304195350+	4026588350+	4495578351+
1000000051+	1000000051+	1000000051+		7053666851+	4000000051+	2500000051+		1410733452+	2060733452+
1000000051+	2000000051+	2000000051+		7053666851+	4000000051+	1250000051+		7053667051+	1230366752+
1000000051+	3000000051+	3000000051+		7053666851+	4000000051+	8333333350+		4702444751+	9535778051+
1000000051+	4000000051+	4000000051+		7053666851+	4000000051+	6250000050+		3526833551+	8151833551+
1000000051+	5000000051+	5000000051+		7053666851+	4000000051+	5000000050+		2821466851+	7321466851+
1000000051+	6000000051+	6000000051+		7053666851+	4000000051+	4166666750+		2351222351+	6767889051+
1000000051+	7000000051+	7000000051+		7053666851+	4000000051+	3571428650+		2015333451+	6372476351+
1000000051+	8000000051+	8000000051+	4482561250+	7053666851+	4000000051+	3125000050+	1568896548+	1763416851+	6077485751+
1000000051+	9000000051+	9000000051+	1895098951+	7053666851+	4000000051+	2777777850+	5895863248+	1567481651+	5851155351+
1000000051+	1000000052+	1000000052+	4341941951+	7053666851+	4000000051+	2500000050+	1215743849+	1410733451+	5672890851+
1000000051+	1100000052+	1100000052+	7788785051+	7053666851+	4000000051+	2272727350+	1982599849+	1282484951+	5529583651+
1000000051+	1200000052+	1200000052+	1223562852+	7053666851+	4000000051+	2083333350+	2854979849+	1175611251+	5412494351+
1000000051+	1300000052+	1300000052+	1768247152+	7053666851+	3900000051+	1923076950+	3713318949+	1085179551+	5214620451+
1000000051+	1400000052+	1400000052+	2412931452+	7053666851+	3900000051+	1785714350+	4705216349+	1007666751+	5133290351+
1000000051+	1500000052+	1500000052+	3157615752+	7053666851+	3900000051+	1666666750+	5746860549+	9404889350+	5064624251+
1000000051+	1600000052+	1600000052+	4002300052+	7053666851+	3900000051+	1562500050+	6828924449+	8817083850+	5006247651+
1000000051+	1700000052+	1700000052+	4946984352+	7053666851+	3900000051+	1470588250+	7944274749+	8298431850+	4956344751+
1000000051+	1800000052+	1800000052+	5991668552+	7053666851+	3900000051+	1388888950+	9087363949+	7837407850+	4913503351+
1000000051+	1900000052+	1900000052+	7136353052+	7053666851+	3900000051+	1315789550+	1025381350+	7424912650+	4876608451+
1000000051+	2000000052+	2000000052+	8381037052+	7053666851+	3900000051+	1250000050+	1144011650+	7053667050+	4844767951+
1000000051+	2100000052+	2100000052+	9725721552+	7053666851+	3900000051+	1190476250+	1264343850+	6717778150+	4817259851+
1000000051+	2200000052+	2200000052+	1117040653+	7053666851+	3900000051+	1136363650+	1386145850+	6412424550+	4793493551+
1000000051+	2300000052+	2300000052+	1271509053+	7053666851+	3900000051+	1086956550+	1509225950+	6133623550+	4772980751+
1000000051+	2400000052+	2400000052+	1435977553+	7053666851+	3900000051+	1041666750+	1633424450+	5878055850+	4755314751+
1000000051+	2500000052+	2500000052+	1610445953+	7053666851+	3800000051+	1000000050+	1713514450+	5642933650+	4635644851+
1000000051+	2600000052+	2600000052+	1794914353+	7053666851+	3800000051+	9615384649+	1836335450+	5425897750+	4622377151+
1000000051+	2700000052+	2700000052+	1989382853+	7053666851+	3800000051+	9259259349+	1959910450+	5224938550+	4611077551+
1000000051+	2800000052+	2800000052+	2193851253+	7053666851+	3800000051+	8928571449+	2084158650+	5038333650+	4601535051+
1000000051+	2900000052+	2900000052+	2408319653+	7053666851+	3800000051+	8620689749+	2209010450+	4864597950+	4593567751+
1000000051+	3000000052+	3000000052+	2632788053+	7053666851+	3800000051+	8333333349+	2334405350+	4702444750+	4587018351+
1000000051+	3100000052+	3100000052+	2867256553+	7053666851+	3800000051+	8064516149+	2460291150+	4550752950+	4581749651+
1000000051+	3200000052+	3200000052+	3111724953+	7053666851+	3800000051+	7812500049+	2586621450+	4408541950+	4577641351+
1000000051+	3300000052+	3300000052+	3366193353+	7053666851+	3800000051+	7575757649+	2713355950+	4274949750+	4574588251+
1000000051+	3400000052+	3400000052+	3630661853+	7053666851+	3800000051+	7352941249+	2840459050+	4149215950+	4572496951+
1000000051+	3500000052+	3500000052+	3905130253+	7053666851+	3800000051+	7142857149+	2967899150+	4030666950+	4571285251+
1000000051+	3600000052+	3600000052+	4189598653+	7053666851+	3800000051+	6944444449+	3095648150+	3918703950+	4570879651+
1000000051+	3700000052+	3700000052+	4484067153+	7053666851+	3700000051+	6756756849+	3138847050+	3812793050+	4462731651+
1000000051+	3800000052+	3800000052+	4788535553+	7053666851+	3700000051+	6578947449+	3263765050+	3712456350+	4463411651+
2000000051+	1000000051+	1000000051+		6057699951+	4000000051+	2500000051+		1211540052+	1861540052+
2000000051+	2000000051+	2000000051+		6057699951+	4000000051+	1250000051+		6057700051+	1130770052+
2000000051+	3000000051+	3000000051+		6057699951+	4000000051+	8333333350+		4038466751+	8871800051+
2000000051+	4000000051+	4000000051+		6057699951+	4000000051+	6250000050+		3028850051+	7653850051+
2000000051+	5000000051+	5000000051+		6057699951+	4000000051+	5000000050+		2423080051+	6923080051+
2000000051+	6000000051+	6000000051+		6057699951+	4000000051+	4166666750+		2019233351+	6435900051+
2000000051+	7000000051+	7000000051+	4482561250+	6057699951+	4000000051+	3571428650+	1793024648+	1730771451+	6089707351+
2000000051+	8000000051+	8000000051+	1895098951+	6057699951+	4000000051+	3125000050+	6632846148+	1514425051+	5833557851+
2000000051+	9000000051+	9000000051+	4341941951+	6057699951+	4000000051+	2777777850+	1350826449+	1346155651+	5637441751+
2000000051+	1000000052+	1000000052+	7788785051+	6057699951+	4000000051+	2500000050+	2180859849+	1211540051+	5483348651+
2000000051+	1100000052+	1100000052+	1223562852+	6057699951+	4000000051+	2272727350+	3114523549+	1101400051+	5359817951+
2000000051+	1200000052+	1200000052+	1768247152+	6057699951+	4000000051+	2083333350+	4125909949+	1009616751+	5259209151+
2000000051+	1300000052+	1300000052+	2412931452+	6057699951+	3900000051+	1923076950+	5067156049+	9319538550+	5074933251+
2000000051+	1400000052+	1400000052+	3157615752+	6057699951+	3900000051+	1785714350+	6157350549+	8653857150+	5005530651+
2000000051+	1500000052+	1500000052+	4002300052+	6057699951+	3900000051+	1666666750+	7284186049+	8076933350+	4947201951+
2000000051+	1600000052+	1600000052+	4946984352+	6057699951+	3900000051+	1562500050+	8440791949+	7572125050+	4897870451+
2000000051+	1700000052+	1700000052+	5991668552+	6057699951+	3900000051+	1470588250+	9621914749+	7126705950+	4855948551+
2000000051+	1800000052+	1800000052+	7136353052+	6057699951+	3900000051+	1388888950+	1082346950+	6730778850+	4820201451+
2000000051+	1900000052+	1900000052+	8381037052+	6057699951+	3900000051+	1315789550+	1204222750+	6376526350+	4789653951+
2000000051+	2000000052+	2000000052+	9725721552+	6057699951+	3900000051+	1250000050+	1327561050+	6057700050+	4763526151+
2000000051+	2100000052+	2100000052+	1117040653+	6057699951+	3900000051+	1190476250+	1452152850+	5769238150+	4741186751+
2000000051+	2200000052+	2200000052+	1271509053+	6057699951+	3900000051+	1136363650+	1577827150+	5507000050+	4722119151+

2000000051+	2300000052+	2300000052+	1435977553+	6057699951+	3900000051+	1086956550+	1704442950+	5267565250+	4705896551+
2000000051+	2400000052+	2400000052+	1610445953+	6057699951+	3900000051+	1041666750+	1831882250+	5048083350+	4692163251+
2000000051+	2500000052+	2500000052+	1794914353+	6057699951+	3800000051+	1000000050+	1909788850+	4846160050+	4575594951+
2000000051+	2600000052+	2600000052+	1989382853+	6057699951+	3800000051+	9615384649+	2035291650+	4659769250+	4565659951+
2000000051+	2700000052+	2700000052+	2193851253+	6057699951+	3800000051+	9259259349+	2161349750+	4487185250+	4557446151+
2000000051+	2800000052+	2800000052+	2408319653+	6057699951+	3800000051+	8928571449+	2287903650+	4326928650+	4550769051+
2000000051+	2900000052+	2900000052+	2632788053+	6057699951+	3800000051+	8620689749+	2414902050+	4177724150+	4545469551+
2000000051+	3000000052+	3000000052+	2867256553+	6057699951+	3800000051+	8333333349+	2542300850+	4038466750+	4541410151+
2000000051+	3100000052+	3100000052+	3111724953+	6057699951+	3800000051+	8064516149+	2670060850+	3908193550+	4538470751+
2000000051+	3200000052+	3200000052+	3366193353+	6057699951+	3800000051+	7812500049+	2798148350+	3786062550+	4536546151+
2000000051+	3300000052+	3300000052+	3630661853+	6057699951+	3800000051+	7575757649+	2926535550+	3671333350+	4535544351+
2000000051+	3400000052+	3400000052+	3905130253+	6057699951+	3800000051+	7352941249+	3055190350+	3563352950+	4535383751+
2000000051+	3500000052+	3500000052+	4189598653+	6057699951+	3800000051+	7142857149+	3184095150+	3461542950+	4535992451+
3000000051+	1000000051+	1000000051+		5074707651+	4000000051+	2500000051+		1014941552+	1664941552+
3000000051+	2000000051+	2000000051+		5074707651+	4000000051+	1250000051+		5074707551+	1032470852+
3000000051+	3000000051+	3000000051+		5074707651+	4000000051+	8333333350+		3383138351+	8216471651+
3000000051+	4000000051+	4000000051+		5074707651+	4000000051+	6250000050+		2537353851+	7162353851+
3000000051+	5000000051+	5000000051+		5074707651+	4000000051+	5000000050+		2029883051+	6529883051+
3000000051+	6000000051+	6000000051+	4482561250+	5074707651+	4000000051+	4166666750+	2091862048+	1691569251+	6110327851+
3000000051+	7000000051+	7000000051+	1895098951+	5074707651+	4000000051+	3571428650+	7580395648+	1449916451+	5814639751+
3000000051+	8000000051+	8000000051+	4341941951+	5074707651+	4000000051+	3125000050+	1519679849+	1268676951+	5596373751+
3000000051+	9000000051+	9000000051+	7788785051+	5074707651+	4000000051+	2777777850+	2423177649+	1127712851+	5429722451+
3000000051+	1000000052+	1000000052+	1223562852+	5074707651+	4000000051+	2500000050+	3425975849+	1014941551+	5299201351+
3000000051+	1100000052+	1100000052+	1768247152+	5074707651+	4000000051+	2272727350+	4500992649+	9226740950+	5194956751+
3000000051+	1200000052+	1200000052+	2412931452+	5074707651+	4000000051+	2083333350+	5630173349+	8457845850+	5110419651+
3000000051+	1300000052+	1300000052+	3157615752+	5074707651+	3900000051+	1923076950+	6630992849+	7807242350+	4939341851+
3000000051+	1400000052+	1400000052+	4002300052+	5074707651+	3900000051+	1785714350+	7804485049+	7249582150+	4881574551+
3000000051+	1500000052+	1500000052+	4946984352+	5074707651+	3900000051+	1666666750+	9003511349+	6766276750+	4833329551+
3000000051+	1600000052+	1600000052+	5991668552+	5074707651+	3900000051+	1562500050+	1022328450+	6343384450+	4792821251+
3000000051+	1700000052+	1700000052+	7136353052+	5074707651+	3900000051+	1470588250+	1146014450+	5970244150+	4758684651+
3000000051+	1800000052+	1800000052+	8381037052+	5074707651+	3900000051+	1388888950+	1271123950+	5638563950+	4729857751+
3000000051+	1900000052+	1900000052+	9725721552+	5074707651+	3900000051+	1315789550+	1397432650+	5341797450+	4705502051+
3000000051+	2000000052+	2000000052+	1117040653+	5074707651+	3900000051+	1250000050+	1524760450+	5074707550+	4684946851+
3000000051+	2100000052+	2100000052+	1271509053+	5074707651+	3900000051+	1190476250+	1652961750+	4833054850+	4667649351+
3000000051+	2200000052+	2200000052+	1435977553+	5074707651+	3900000051+	1136363650+	1781917550+	4613370550+	4653165351+
3000000051+	2300000052+	2300000052+	1610445953+	5074707651+	3900000051+	1086956550+	1911529350+	4412789150+	4641127551+
3000000051+	2400000052+	2400000052+	1794914353+	5074707651+	3900000051+	1041666750+	2041715050+	4228922950+	4631230551+
3000000051+	2500000052+	2500000052+	1989382853+	5074707651+	3800000051+	1000000050+	2116703350+	4059766050+	4517646951+
3000000051+	2600000052+	2600000052+	2193851253+	5074707651+	3800000051+	9615384649+	2244478550+	3903621250+	4510963851+
3000000051+	2700000052+	2700000052+	2408319653+	5074707651+	3800000051+	9259259349+	2372640850+	3759042650+	4505761051+
3000000051+	2800000052+	2800000052+	2632788053+	5074707651+	3800000051+	8928571449+	2501148550+	3624791150+	4501879751+
3000000051+	2900000052+	2900000052+	2867256553+	5074707651+	3800000051+	8620689749+	2629966450+	3499798350+	4499183351+
3000000051+	3000000052+	3000000052+	3111724953+	5074707651+	3800000051+	8333333349+	2759062850+	3383138350+	4497553451+
3000000051+	3100000052+	3100000052+	3366193353+	5074707651+	3800000051+	8064516149+	2888411150+	3274004850+	4496886851+
3000000051+	3200000052+	3200000052+	3630661853+	5074707651+	3800000051+	7812500049+	3017987750+	3171692250+	4497093051+
4000000051+	1000000051+	1000000051+		4123830951+	4000000051+	2500000051+		8247661851+	1474766252+
4000000051+	2000000051+	2000000051+		4123830951+	4000000051+	1250000051+		4123830951+	9373830951+
4000000051+	3000000051+	3000000051+		4123830951+	4000000051+	8333333350+		2749220651+	7582553951+
4000000051+	4000000051+	4000000051+		4123830951+	4000000051+	6250000050+		2061915851+	6686915551+
4000000051+	5000000051+	5000000051+	4482561250+	4123830951+	4000000051+	5000000050+	2510234448+	1649532451+	6152042651+
4000000051+	6000000051+	6000000051+	1895098951+	4123830951+	4000000051+	4166666750+	8843794848+	1374610351+	5800120851+
4000000051+	7000000051+	7000000051+	4341941951+	4123830951+	4000000051+	3571428650+	1736776949+	1178237451+	5552748151+
4000000051+	8000000051+	8000000051+	7788785051+	4123830951+	4000000051+	3125000050+	2726074849+	1030957751+	5370718451+
4000000051+	9000000051+	9000000051+	1223562852+	4123830951+	4000000051+	2777777850+	3806639849+	9164068750+	5232251151+
4000000051+	1000000052+	1000000052+	1768247152+	4123830951+	4000000051+	2500000050+	4951091949+	8247661850+	5124277151+
4000000051+	1100000052+	1100000052+	2412931452+	4123830951+	4000000051+	2272727350+	6142007249+	7497874450+	5038480251+
4000000051+	1200000052+	1200000052+	3157615752+	4123830951+	4000000051+	2083333350+	7367701149+	6873051550+	4969316251+
4000000051+	1300000052+	1300000052+	4002300052+	4123830951+	3900000051+	1923076950+	8404830049+	6344355250+	4810791551+
4000000051+	1400000052+	1400000052+	4946984352+	4123830951+	3900000051+	1785714350+	9646619349+	5891187050+	4764156351+
4000000051+	1500000052+	1500000052+	5991668552+	4123830951+	3900000051+	1666666750+	1090483750+	5498441250+	4725559251+
4000000051+	1600000052+	1600000052+	7136353052+	4123830951+	3900000051+	1562500050+	1217640350+	5154788650+	4693492951+
4000000051+	1700000052+	1700000052+	8381037052+	4123830951+	3900000051+	1470588250+	1345895950+	4851565850+	4666805051+
4000000051+	1800000052+	1800000052+	9725721552+	4123830951+	3900000051+	1388888950+	1475067850+	4582034350+	4644599151+
4000000051+	1900000052+	1900000052+	1117040653+	4123830951+	3900000051+	1315789550+	1605010950+	4340874650+	4626167651+
4000000051+	2000000052+	2000000052+	1271509053+	4123830951+	3900000051+	1250000050+	1735609850+	4123830950+	4610944151+
4000000051+	2100000052+	2100000052+	1435977553+	4123830951+	3900000051+	1190476250+	1866770850+	3927458050+	4598470551+
4000000051+	2200000052+	2200000052+	1610445953+	4123830951+	3900000051+	1136363650+	1998417050+	3748937250+	4588371851+
4000000051+	2300000052+	2300000052+	1794914353+	4123830951+	3900000051+	1086956550+	2130483550+	3585939950+	4580338251+
4000000051+	2400000052+	2400000052+	1989382853+	4123830951+	3900000051+	1041666750+	2262922950+	3436525850+	4574111651+
4000000051+	2500000052+	2500000052+	2193851253+	4123830951+	3800000051+	1000000050+	2334257750+	3299064750+	4463332351+
4000000051+	2600000052+	2600000052+	2408319653+	4123830951+	3800000051+	9615384649+	2463896250+	3172177650+	4459761251+
4000000051+	2700000052+	2700000052+	2632788053+	4123830951+	3800000051+	9259259349+	2593783650+	3054689650+	4457440051+
4000000051+	2800000052+	2800000052+	2867256553+	4123830951+	3800000051+	8928571449+	2723893850+	2945593550+	4456234551+
4000000051+	2900000052+	2900000052+	3111724953+	4123830951+	3800000051+	8620689749+	2854202950+	2844021350+	4456029351+
4000000051+	3000000052+	3000000052+	3366193353+	4123830951+	3800000051+	8333333349+	2984691550+	2749220650+	4456724651+
5000000051+	1000000051+	1000000051+		3233393551+	4000000051+	2500000051+		6466787051+	1296678752+
5000000051+	2000000051+	2000000051+		3233393551+	4000000051+	1250000051+		3233393551+	8483393551+
5000000051+	3000000051+	3000000051+		3233393551+	4000000051+	8333333350+		2155595751+	6988929051+
5000000051+	4000000051+	4000000051+	4482561250+	3233393551+	4000000051+	6250000050+	3137793048+	1616696851+	6244834651+
5000000051+	5000000051+	5000000051+	1895098951+	3233393551+	4000000051+	5000000050+	1061255449+	1293357451+	5803970051+
5000000051+	6000000051+	6000000051+	4341941951+	3233393551+	4000000051+	4166666750+	2026239749+	1077797851+	5514726951+
5000000051+	7000000051+	7000000051+	7788785051+	3233393551+	4000000051+	3571428650+	3115514049+	9238267150+	5312124751+
5000000051+	8000000051+	8000000051+	1223562852+	3233393551+	4000000051+	3125000050+	4282469849+	8083483850+	5163673151+
5000000051+	9000000051+	9000000051+	1768247152+	3233393551+	4000000051+	2777777850+	5501213249+	7185318950+	5051321851+
5000000051+	1000000052+	1000000052+	2412931452+	3233393551+	4000000051+	2500000050+	6756207949+	6466787050+	4964240851+
5000000051+	1100000052+	1100000052+	3157615752+	3233393551+	4000000051+	2272727350+	8037567449+	5878897350+	4895538151+
5000000051+	1200000052+	1200000052+	4002300052+	3233393551+	4000000051+	2083333350+	9338700049+	5388989250+	4840619251+
5000000051+	1300000052+	1300000052+	4946984352+	3233393551+	3900000051+	1923076950+	1038866750+	4974451550+	4693639651+
5000000051+	1400000052+	1400000052+	5991668552+	3233393551+	3900000051+	1785714350+	1168375450+	4619133650+	4657322351+
5000000051+	1500000052+	1500000052+	7136353052+	3233393551+	3900000051+	1666666750+	1298816350+	4311191350+	4627667451+
5000000051+	1600000052+	1600000052+	8381037052+	3233393551+	3900000051+	1562500050+	1430014450+	4041741950+	4603425651+
5000000051+	1700000052+	1700000052+	9725721552+	3233393551+	3900000051+	1470588250+	1561836550+	3803992450+	4583641751+
5000000051+	1800000052+	1800000052+	1117040653+	3233393551+	3900000051+	1388888950+	1694178250+	3592659450+	4567572651+
5000000051+	1900000052+	1900000052+	1271509053+	3233393551+	3900000051+	1315789550+	1826957750+	3403572150+	4554632051+
5000000051+	2000000052+	2000000052+	1435977553+	3233393551+	3900000051+	1250000050+	1960109350+	3233393550+	4544350351+
5000000051+	2100000052+	2100000052+	1610445953+	3233393551+	3900000051+	1190476250+	2093579750+	3079422450+	4536347851+
5000000051+	2200000052+	2200000052+	1794914353+	3233393551+	3900000051+	1136363650+	2227325550+	2939448650+	4530313951+
5000000051+	2300000052+	2300000052+	1989382853+	3233393551+	3900000051+	1086956550+	2361310950+	2811646550+	4525991551+
5000000051+	2400000052+	2400000052+	2193851253+	3233393551+	3900000051+	1041666750+	2495505850+	2694494650+	4523166851+
5000000051+	2500000052+	2500000052+	2408319653+	3233393551+	3800000051+	1000000050+	2562452150+	2586714850+	4414916751+
5000000051+	2600000052+	2600000052+	2632788053+	3233393551+	3800000051+	9615384649+	2693544550+	2487225850+	4414230951+
5000000051+	2700000052+	2700000052+	2867256553+	3233393551+	3800000051+	9259259349+	2824778750+	2395106350+	4414581151+
6000000051+	1000000051+	1000000051+		2435186351+	4000000051+	2500000051+		4870372651+	1137037352+
6000000051+	2000000051+	2000000051+		2435186351+	4000000051+	1250000051+		2435186351+	7685186351+
6000000051+	3000000051+	3000000051+	4482561250+	2435186351+	4000000051+	8333333350+	4183724048+	1623457551+	6460974551+
6000000051+	4000000051+	4000000051+	1895098951+	2435186351+	4000000051+	6250000050+	1326569249+	1217593251+	5855858951+
6000000051+	5000000051+	5000000051+	4341941951+	2435186351+	4000000051+	5000000050+	2431487649+	9740745250+	5498389451+
6000000051+	6000000051+	6000000051+	7788785051+	2435186351+	4000000051+	4166666750+	3634766349+	8117287750+	5264743251+

```
6000000051+ 7000000051+ 7000000051+ 1223562852+ 2435186351+ 4000000051+ 3571428650+ 4894251149+ 6957675150+ 5101852951+
6000000051+ 8000000051+ 8000000051+ 17682471524 2435186351+ 4000000051+ 3125000050+ 6188664949+ 6087965850+ 4983185251+
6000000051+ 9000000051+ 9000000051+ 2412931452+ 2435186351+ 4000000051+ 2777777850+ 7506897749+ 5411525150+ 4893999351+
6000000051+ 1000000052+ 1000000052+ 3157615752+ 2435186351+ 4000000051+ 2500000050+ 8841324149+ 4870372650+ 4825450551+
6000000051+ 1100000052+ 1100000052+ 4002300052+ 2435186351+ 4000000051+ 2272727350+ 1018767350+ 4427611550+ 4771910651+
6000000051+ 1200000052+ 1200000052+ 4946984352+ 2435186351+ 4000000051+ 2083333350+ 1154296350+ 4058643850+ 4729627351+
6000000051+ 1300000052+ 1300000052+ 5991668552+ 2435186351+ 3900000051+ 1923076950+ 1258250450+ 3746440550+ 4592776851+
6000000051+ 1400000052+ 1400000052+ 7136353052+ 2435186351+ 3900000051+ 1785714350+ 1391588950+ 3478837650+ 4565614151+
6000000051+ 1500000052+ 1500000052+ 8381037052+ 2435186351+ 3900000051+ 1666666750+ 1525348750+ 3246915150+ 4543893151+
6000000051+ 1600000052+ 1600000052+ 9725721552+ 2435186351+ 3900000051+ 1562500050+ 1659451350+ 3043982950+ 4526593451+
6000000051+ 1700000052+ 1700000052+ 1117040653+ 2435186351+ 3900000051+ 1470588250+ 1793835850+ 2864925150+ 4512934951+
6000000051+ 1800000052+ 1800000052+ 1271509053+ 2435186351+ 3900000051+ 1388888950+ 1928455350+ 2705762650+ 4502310751+
6000000051+ 1900000052+ 1900000052+ 1435977553+ 2435186351+ 3900000051+ 1315789550+ 2063272950+ 2563354050+ 4494241751+
6000000051+ 2000000052+ 2000000052+ 1610445953+ 2435186351+ 3900000051+ 1250000050+ 2198258750+ 2435186350+ 4488344551+
6000000051+ 2100000052+ 2100000052+ 1794914353+ 2435186351+ 3900000051+ 1190476250+ 2333388650+ 2319225050+ 4484309051+
6000000051+ 2200000052+ 2200000052+ 1989382853+ 2435186351+ 3900000051+ 1136363650+ 2468643250+ 2213805750+ 4481881351+
6000000051+ 2300000052+ 2300000052+ 2193851253+ 2435186351+ 3900000051+ 1086956550+ 2604006050+ 2117553350+ 4480851651+
6000000051+ 2400000052+ 2400000052+ 2408319653+ 2435186351+ 3900000051+ 1041666750+ 2739463550+ 2029321950+ 4481045351+
7000000051+ 1000000051+ 1000000051+                1755845851+ 4000000051+ 2500000051+                3511691651+ 1001169252+
7000000051+ 2000000051+ 2000000051+ 4482561250+ 1755845851+ 4000000051+ 1250000051+ 6275586048+ 1755845851+ 7012121451+
7000000051+ 3000000051+ 3000000051+ 1895098951+ 1755845851+ 4000000051+ 8333333350+ 1768759049+ 1170563951+ 6021584851+
7000000051+ 4000000051+ 4000000051+ 4341941951+ 1755845851+ 4000000051+ 6250000050+ 3039359549+ 8779229050+ 5533316551+
7000000051+ 5000000051+ 5000000051+ 7788785051+ 1755845851+ 4000000051+ 5000000050+ 4361719649+ 7023383250+ 5245955551+
7000000051+ 6000000051+ 6000000051+ 1223562852+ 1755845851+ 4000000051+ 4166666750+ 5709959749+ 5852819350+ 5059048251+
7000000051+ 7000000051+ 7000000051+ 17682471524 1755845851+ 4000000051+ 3571428650+ 7072988449+ 5016702350+ 4929543051+
7000000051+ 8000000051+ 8000000051+ 2412931452+ 1755845851+ 4000000051+ 3125000050+ 8445259949+ 4389614550+ 4835914151+
7000000051+ 9000000051+ 9000000051+ 3157615752+ 1755845851+ 4000000051+ 2777777850+ 9823693449+ 3901879650+ 4766202751+
7000000051+ 1000000052+ 1000000052+ 4002300052+ 1755845851+ 4000000051+ 2500000050+ 1120644050+ 3511691650+ 4713233651+
7000000051+ 1100000052+ 1100000052+ 4946984352+ 1755845851+ 4000000051+ 2272727350+ 1259232450+ 3192446950+ 4672440651+
7000000051+ 1200000052+ 1200000052+ 5991668552+ 1755845851+ 4000000051+ 2083333350+ 1398056050+ 2926409750+ 4640779951+
7000000051+ 1300000052+ 1300000052+ 7136353052+ 1755845851+ 3900000051+ 1923076950+ 1498634250+ 2701301250+ 4512301251+
7000000051+ 1400000052+ 1400000052+ 8381037052+ 1755845851+ 3900000051+ 1785714350+ 1634302250+ 2508351150+ 4492836751+
7000000051+ 1500000052+ 1500000052+ 9725721552+ 1755845851+ 3900000051+ 1666666750+ 1770081350+ 2341127750+ 4477787651+
7000000051+ 1600000052+ 1600000052+ 1117040653+ 1755845851+ 3900000051+ 1562500050+ 1905950550+ 2194807350+ 4466325851+
7000000051+ 1700000052+ 1700000052+ 1271509053+ 1755845851+ 3900000051+ 1470588250+ 2041893950+ 2065700950+ 4457818351+
7000000051+ 1800000052+ 1800000052+ 1435977553+ 1755845851+ 3900000051+ 1388888950+ 2177899250+ 1950939850+ 4451772851+
7000000051+ 1900000052+ 1900000052+ 1610445953+ 1755845851+ 3900000051+ 1315789550+ 2313956550+ 1848258750+ 4447800651+
7000000051+ 2000000052+ 2000000052+ 1794914353+ 1755845851+ 3900000051+ 1250000050+ 2450058150+ 1755845850+ 4445590451+
7000000051+ 2100000052+ 2100000052+ 1989382853+ 1755845851+ 3900000051+ 1190476250+ 2586197650+ 1672234150+ 4444890851+
7000000051+ 2200000052+ 2200000052+ 2193851253+ 1755845851+ 3900000051+ 1136363650+ 2722369950+ 1596223550+ 4445495851+
8000000051+ 1000000051+ 1000000051+ 4482561250+ 1209573051+ 4000000051+ 2500000051+ 1255117249+ 2419146051+ 8931697251+
8000000051+ 2000000051+ 2000000051+ 1895098951+ 1209573051+ 4000000051+ 1250000051+ 2653138549+ 1209573051+ 6486104451+
8000000051+ 3000000051+ 3000000051+ 4341941951+ 1209573051+ 4000000051+ 8333333350+ 4052479349+ 8063820050+ 5680240151+
8000000051+ 4000000051+ 4000000051+ 7788785051+ 1209573051+ 4000000051+ 6250000050+ 5452149549+ 6047865050+ 5284308051+
8000000051+ 5000000051+ 5000000051+ 1223562852+ 1209573051+ 4000000051+ 5000000050+ 6851951649+ 4838292050+ 5052348751+
8000000051+ 6000000051+ 6000000051+ 17682471524 1209573051+ 4000000051+ 4166666750+ 8251819849+ 4031910050+ 4902375951+
8000000051+ 7000000051+ 7000000051+ 2412931452+ 1209573051+ 4000000051+ 3571428650+ 9651725649+ 3455922950+ 4799252551+
8000000051+ 8000000051+ 8000000051+ 3157615752+ 1209573051+ 4000000051+ 3125000050+ 1105165550+ 3023932550+ 4725409951+
8000000051+ 9000000051+ 9000000051+ 4002300052+ 1209573051+ 4000000051+ 2777777850+ 1245160050+ 2687940050+ 4671087851+
8000000051+ 1000000052+ 1000000052+ 4946984352+ 1209573051+ 4000000051+ 2500000050+ 1385155650+ 2419146050+ 4630430251+
8000000051+ 1100000052+ 1100000052+ 5991668552+ 1209573051+ 4000000051+ 2272727350+ 1525152050+ 2199223650+ 4599710351+
8000000051+ 1200000052+ 1200000052+ 7136353052+ 1209573051+ 4000000051+ 2083333350+ 1665149050+ 2015955050+ 4576443751+
8000000051+ 1300000052+ 1300000052+ 8381037052+ 1209573051+ 3900000051+ 1923076950+ 1760017850+ 1860881550+ 4454397751+
8000000051+ 1400000052+ 1400000052+ 9725721552+ 1209573051+ 3900000051+ 1785714350+ 1896515750+ 1727961450+ 4441019151+
8000000051+ 1500000052+ 1500000052+ 1117040653+ 1209573051+ 3900000051+ 1666666750+ 2033013950+ 1612764050+ 4431244551+
8000000051+ 1600000052+ 1600000052+ 1271509053+ 1209573051+ 3900000051+ 1562500050+ 2169512350+ 1511966350+ 4424397851+
8000000051+ 1700000052+ 1700000052+ 1435977553+ 1209573051+ 3900000051+ 1470588250+ 2306010950+ 1423027150+ 4419962651+
8000000051+ 1800000052+ 1800000052+ 1610445953+ 1209573051+ 3900000051+ 1388888950+ 2442509650+ 1343970050+ 4417536951+
8000000051+ 1900000052+ 1900000052+ 1794914353+ 1209573051+ 3900000051+ 1315789550+ 2579008550+ 1273234750+ 4416803451+
8000000051+ 2000000052+ 2000000052+ 1989382853+ 1209573051+ 3900000051+ 1250000050+ 2715507550+ 1209573050+ 4417508151+
9000000051+ 1000000051+ 1000000051+ 1446843351+ 7953749550+ 4000000051+ 2500000051+ 4051161249+ 1590749951+ 8131261551+
9000000051+ 2000000051+ 2000000051+ 3893686051+ 7953749550+ 4000000051+ 1250000051+ 5451160549+ 7953749550+ 6099886651+
9000000051+ 3000000051+ 3000000051+ 7340529051+ 7953749550+ 4000000051+ 8333333350+ 6851160349+ 5302499750+ 5432094951+
9000000051+ 4000000051+ 4000000051+ 1178737252+ 7953749550+ 4000000051+ 6250000050+ 8251160549+ 3976874850+ 5105199151+
9000000051+ 5000000051+ 5000000051+ 1723421552+ 7953749550+ 4000000051+ 5000000050+ 9651160449+ 3181499850+ 4914661651+
9000000051+ 6000000051+ 6000000051+ 2368105852+ 7953749550+ 4000000051+ 4166666750+ 1105116050+ 2651249850+ 4792303351+
9000000051+ 7000000051+ 7000000051+ 3112790152+ 7953749550+ 4000000051+ 3571428650+ 1245116050+ 2272499950+ 4708904551+
9000000051+ 8000000051+ 8000000051+ 3957474452+ 7953749550+ 4000000051+ 3125000050+ 1385116150+ 1988437450+ 4649855351+
9000000051+ 9000000051+ 9000000051+ 4902158752+ 7953749550+ 4000000051+ 2777777850+ 1525116150+ 1767499950+ 4607039451+
9000000051+ 1000000052+ 1000000052+ 5946843052+ 7953749550+ 4000000051+ 2500000050+ 1665116050+ 1590749950+ 4575586651+
9000000051+ 1100000052+ 1100000052+ 7091527352+ 7953749550+ 4000000051+ 2272727350+ 1805116050+ 1446136350+ 4552397951+
9000000051+ 1200000052+ 1200000052+ 8336211652+ 7953749550+ 4000000051+ 2083333350+ 1945116050+ 1325624950+ 4535407451+
9000000051+ 1300000052+ 1300000052+ 9680895952+ 7953749550+ 3900000051+ 1923076950+ 2032988250+ 1223653850+ 4417971951+
9000000051+ 1400000052+ 1400000052+ 1112558053+ 7953749550+ 3900000051+ 1785714350+ 2169488150+ 1136249950+ 4409145251+
9000000051+ 1500000052+ 1500000052+ 12670265534 7953749550+ 3900000051+ 1666666750+ 2305988350+ 1060499950+ 4403315551+
9000000051+ 1600000052+ 1600000052+ 14314949534 7953749550+ 3900000051+ 1562500050+ 2442488250+ 9942186949+ 4399920751+
9000000051+ 1700000052+ 1700000052+ 1605963353+ 7953749550+ 3900000051+ 1470588250+ 2578988150+ 9357352449+ 4398531151+
9000000051+ 1800000052+ 1800000052+ 1790431753+ 7953749550+ 3900000051+ 1388888950+ 2715488150+ 8837499449+ 4398812751+
1000000052+ 1000000051+ 1000000051+ 2446843051+ 4992354950+ 4000000051+ 2500000051+ 6851160449+ 9984709850+ 7566987651+
1000000052+ 2000000051+ 2000000051+ 5893686051+ 4992354950+ 4000000051+ 1250000051+ 8251160549+ 4992354950+ 5831747151+
1000000052+ 3000000051+ 3000000051+ 1034052952+ 4992354950+ 4000000051+ 8333333350+ 9651160349+ 3328236650+ 5262668651+
1000000052+ 4000000051+ 4000000051+ 15787372524 4992354950+ 4000000051+ 6250000050+ 1105116150+ 2496177550+ 4985129451+
1000000052+ 5000000051+ 5000000051+ 2223421552+ 4992354950+ 4000000051+ 5000000050+ 1245116050+ 1996942050+ 4824205851+
1000000052+ 6000000051+ 6000000051+ 2968105852+ 4992354950+ 4000000051+ 4166666750+ 1385116050+ 1664118350+ 4721590151+
1000000052+ 7000000051+ 7000000051+ 3812790152+ 4992354950+ 4000000051+ 3571428650+ 1525116050+ 1426387150+ 4652293251+
1000000052+ 8000000051+ 8000000051+ 4757474452+ 4992354950+ 4000000051+ 3125000050+ 1665116150+ 1248088750+ 4603820551+
1000000052+ 9000000051+ 9000000051+ 5802158752+ 4992354950+ 4000000051+ 2777777850+ 1805116150+ 1109412250+ 4569230651+
1000000052+ 1000000052+ 1000000052+ 6946843052+ 4992354950+ 4000000051+ 2500000050+ 1945116050+ 9984709849+ 4544358751+
1000000052+ 1100000052+ 1100000052+ 8191527352+ 4992354950+ 4000000051+ 2272727350+ 2085116050+ 9077008949+ 4526554451+
1000000052+ 1200000052+ 1200000052+ 9536211652+ 4992354950+ 4000000051+ 2083333350+ 2225116050+ 8320591549+ 4514050851+
1000000052+ 1300000052+ 1300000052+ 1098089653+ 4992354950+ 3900000051+ 1923076950+ 2305988250+ 7680546049+ 4399712051+
1000000052+ 1400000052+ 1400000052+ 1252558053+ 4992354950+ 3900000051+ 1785714350+ 2442488150+ 7131936549+ 4394139651+
1000000052+ 1500000052+ 1500000052+ 1417026553+ 4992354950+ 3900000051+ 1666666750+ 2578988350+ 6656473249+ 4391130251+
1000000052+ 1600000052+ 1600000052+ 1591494953+ 4992354950+ 3900000051+ 1562500050+ 2715488250+ 6240443649+ 4390203251+
1000000052+ 1700000052+ 1700000052+ 1775963353+ 4992354950+ 3900000051+ 1470588250+ 2851988150+ 5873358749+ 4390991251+
1100000052+ 1000000051+ 1000000051+ 3446843051+ 2993146350+ 4000000051+ 2500000051+ 9651160449+ 5986292650+ 7195140951+
1100000052+ 2000000051+ 2000000051+ 7893686051+ 2993146350+ 4000000051+ 1250000051+ 1105116150+ 2993146350+ 5659826251+
1100000052+ 3000000051+ 3000000051+ 13340529524 2993146350+ 4000000051+ 8333333350+ 1245116050+ 1995430950+ 5157388051+
1100000052+ 4000000051+ 4000000051+ 1978737252+ 2993146350+ 4000000051+ 6250000050+ 1385116150+ 1496573250+ 4913168951+
1100000052+ 5000000051+ 5000000051+ 2723421552+ 2993146350+ 4000000051+ 5000000050+ 1525116050+ 1197258550+ 4772237551+
1100000052+ 6000000051+ 6000000051+ 3568105852+ 2993146350+ 4000000051+ 4166666750+ 1665116050+ 9977154349+ 4682949851+
1100000052+ 7000000051+ 7000000051+ 4512790152+ 2993146350+ 4000000051+ 3571428650+ 1805116050+ 8551846649+ 4623173051+
1100000052+ 8000000051+ 8000000051+ 5557474452+ 2993146350+ 4000000051+ 3125000050+ 1945116150+ 7482865849+ 4581840351+
1100000052+ 9000000051+ 9000000051+ 6702158752+ 2993146350+ 4000000051+ 2777777850+ 2085116150+ 6651436249+ 4552803851+
1100000052+ 1000000052+ 1000000052+ 7946843052+ 2993146350+ 4000000051+ 2500000050+ 2225116050+ 5986292649+ 4532374551+
1100000052+ 1100000052+ 1100000052+ 9291527352+ 2993146350+ 4000000051+ 2272727350+ 2365116050+ 5442084249+ 4518205151+
1100000052+ 1200000052+ 1200000052+ 1073621253+ 2993146350+ 4000000051+ 2083333350+ 2505116250+ 4988577249+ 4508730751+
1100000052+ 1300000052+ 1300000052+ 12280896534 2993146350+ 3900000051+ 1923076950+ 2578988250+ 4604840549+ 4396254951+
```

1100000052+	1400000052+	1400000052+	1392558053+	2993146350+	3900000051+	1785714350+	2715488150+	4275923349+	4392879451+
1100000052+	1500000052+	1500000052+	1567026553+	2993146350+	3900000051+	1666666750+	2851988350+	3990861749+	4391774151+
1100000052+	1600000052+	1600000052+	1751494953+	2993146350+	3900000051+	1562500050+	2988488250+	3741432949+	4392513151+
1200000052+	1000000051+	1000000051+	4446843051+	1716088150+	4000000051+	2500000051+	1245116050+	3432176250+	6967729251+
1200000052+	2000000051+	2000000051+	9893686051+	1716088150+	4000000051+	1250000051+	1385116150+	1716088150+	5560120451+
1200000052+	3000000051+	3000000051+	1634052952+	1716088150+	4000000051+	8333333350+	1525116050+	1144058750+	5100250851+
1200000052+	4000000051+	4000000051+	2378737252+	1716088150+	4000000051+	6250000050+	1665116150+	8580440549+	4877316051+
1200000052+	5000000051+	5000000051+	3223421552+	1716088150+	4000000051+	5000000050+	1805116050+	6864352449+	4749155151+
1200000052+	6000000051+	6000000051+	4168105852+	1716088150+	4000000051+	4166666750+	1945116050+	5720293749+	4668381251+
1200000052+	7000000051+	7000000051+	5212790152+	1716088150+	4000000051+	3571428650+	2085116050+	4903108949+	4614685651+
1200000052+	8000000051+	8000000051+	6357474452+	1716088150+	4000000051+	3125000050+	2225116150+	4290220349+	4577913851+
1200000052+	9000000051+	9000000051+	7602158752+	1716088150+	4000000051+	2777777850+	2365116150+	3813529149+	4552424751+
1200000052+	1000000052+	1000000052+	8946843052+	1716088150+	4000000051+	2500000050+	2505116050+	3432176249+	4534833451+
1200000052+	1100000052+	1100000052+	1039152753+	1716088150+	4000000051+	2272727350+	2645116050+	3120160249+	4522985951+
1200000052+	1200000052+	1200000052+	1193621253+	1716088150+	4000000051+	2083333350+	2785116250+	2860146849+	4515446451+
1200000052+	1300000052+	1300000052+	1358089653+	1716088150+	3900000051+	1923076950+	2851988250+	2640135549+	4403907951+
1200000052+	1400000052+	1400000052+	1532558053+	1716088150+	3900000051+	1785714350+	2988488150+	2451554449+	4401935751+
1200000052+	1500000052+	1500000052+	1717026553+	1716088150+	3900000051+	1666666750+	3124988350+	2288117549+	4402046751+
1300000052+	1000000051+	1000000051+	5446843051+	9422677149+	4000000051+	2500000051+	1525116050+	1884535450+	6840965151+
1300000052+	2000000051+	2000000051+	1189368652+	9422677149+	4000000051+	1250000051+	1665116150+	9422677049+	5510738451+
1300000052+	3000000051+	3000000051+	1934052952+	9422677149+	4000000051+	8333333350+	1805116050+	6281784749+	5076662751+
1300000052+	4000000051+	4000000051+	2778737252+	9422677149+	4000000051+	6250000050+	1945116150+	4711338549+	4866625051+
1300000052+	5000000051+	5000000051+	3723421552+	9422677149+	4000000051+	5000000050+	2085116050+	3769070849+	4746202351+
1300000052+	6000000051+	6000000051+	4768105852+	9422677149+	4000000051+	4166666750+	2225116050+	3140892349+	4670587251+
1300000052+	7000000051+	7000000051+	5912790152+	9422677149+	4000000051+	3571428650+	2365116050+	2692193449+	4620576451+
1300000052+	8000000051+	8000000051+	7157474452+	9422677149+	4000000051+	3125000050+	2505116150+	2355669349+	4586568351+
1300000052+	9000000051+	9000000051+	8502158752+	9422677149+	4000000051+	2777777850+	2645116150+	2093928249+	4563228751+
1300000052+	1000000052+	1000000052+	9946843052+	9422677149+	4000000051+	2500000050+	2785116050+	1884535449+	4547357051+
1300000052+	1100000052+	1100000052+	1149152753+	9422677149+	4000000051+	2272727350+	2925116050+	1713214049+	4536916451+
1300000052+	1200000052+	1200000052+	1313621253+	9422677149+	4000000051+	2083333350+	3065116250+	1570446249+	4530549451+
1300000052+	1300000052+	1300000052+	1488089653+	9422677149+	3900000051+	1923076950+	3124988250+	1449646249+	4419302951+
1300000052+	1400000052+	1400000052+	1672558053+	9422677149+	3900000051+	1785714350+	3261488150+	1346096749+	4418181251+
1300000052+	1500000052+	1500000052+	1867026553+	9422677149+	3900000051+	1666666750+	3397988350+	1256356949+	4419029151+
1400000052+	1000000051+	1000000051+	6446843051+	4962976149+	4000000051+	2500000051+	1805116050+	9925952249+	6779771151+
1400000052+	2000000051+	2000000051+	1389368652+	4962976149+	4000000051+	1250000051+	1945116150+	4962976149+	5494141451+
1400000052+	3000000051+	3000000051+	2234052952+	4962976149+	4000000051+	8333333350+	2085116050+	3308650749+	5074931451+
1400000052+	4000000051+	4000000051+	3178737252+	4962976149+	4000000051+	6250000050+	2225116150+	2481488149+	4873226551+
1400000052+	5000000051+	5000000051+	4223421552+	4962976149+	4000000051+	5000000050+	2365116050+	1985190449+	4756363551+
1400000052+	6000000051+	6000000051+	5368105852+	4962976149+	4000000051+	4166666750+	2505116050+	1654325449+	4683721651+
1400000052+	7000000051+	7000000051+	6612790152+	4962976149+	4000000051+	3571428650+	2645116050+	1417993249+	4635834451+
1400000052+	8000000051+	8000000051+	7957474452+	4962976149+	4000000051+	3125000050+	2785116150+	1240744049+	4603419051+
1400000052+	9000000051+	9000000051+	9402158752+	4962976149+	4000000051+	2777777850+	2925116150+	1102883649+	4581318251+
1400000052+	1000000052+	1000000052+	1094684353+	4962976149+	4000000051+	2500000050+	3065116050+	9925952248+	4566437651+
1400000052+	1100000052+	1100000052+	1259152753+	4962976149+	4000000051+	2272727350+	3205116050+	9023592948+	4556807951+
1400000052+	1200000052+	1200000052+	1433621253+	4962976149+	4000000051+	2083333350+	3345116250+	8271626848+	4551116551+
1400000052+	1300000052+	1300000052+	1618089653+	4962976149+	3900000051+	1923076950+	3397988250+	7635347848+	4439741851+
1400000052+	1400000052+	1400000052+	1812558053+	4962976149+	3900000051+	1785714350+	3534488150+	7089965948+	4439110251+
1400000052+	1500000052+	1500000052+	2017026553+	4962976149+	3900000051+	1666666750+	3670988350+	6617301548+	4440382851+
1500000052+	1000000051+	1000000051+	7446843051+	2511846249+	4000000051+	2500000051+	2085116050+	5023692449+	6758748551+
1500000052+	2000000051+	2000000051+	1589368652+	2511846249+	4000000051+	1250000051+	2225116150+	2511846249+	5497630151+
1500000052+	3000000051+	3000000051+	2534052952+	2511846249+	4000000051+	8333333350+	2365116150+	1674564149+	5086590551+
1500000052+	4000000051+	4000000051+	3578737252+	2511846249+	4000000051+	6250000050+	2505116050+	1255923149+	4888070851+
1500000052+	5000000051+	5000000051+	4723421552+	2511846249+	4000000051+	5000000050+	2645116050+	1004738549+	4774559051+
1500000052+	6000000051+	6000000051+	5968105852+	2511846249+	4000000051+	4166666750+	2785116050+	8372820748+	4703551151+
1500000052+	7000000051+	7000000051+	7312790152+	2511846249+	4000000051+	3571428650+	2925116050+	7176703448+	4656831251+
1500000052+	8000000051+	8000000051+	8757474452+	2511846249+	4000000051+	3125000050+	3065116150+	6279615548+	4625291251+
1500000052+	9000000051+	9000000051+	1030215953+	2511846249+	4000000051+	2777777850+	3205116150+	5581880448+	4603871351+
1500000052+	1000000052+	1000000052+	1194684353+	2511846249+	4000000051+	2500000050+	3345116050+	5023692448+	4589535351+
1500000052+	1100000052+	1100000052+	1369152753+	2511846249+	4000000051+	2272727350+	3485116050+	4566993148+	4580351351+
1500000052+	1200000052+	1200000052+	1553621253+	2511846249+	4000000051+	2083333350+	3625116250+	4186410348+	4575031351+
1500000052+	1300000052+	1300000052+	1748089653+	2511846249+	3900000051+	1923076950+	3670988250+	3864378848+	4463270951+
1500000052+	1400000052+	1400000052+	1952558053+	2511846249+	3900000051+	1785714350+	3807488150+	3588351748+	4462908651+
1500000052+	1500000052+	1500000052+	2167026553+	2511846249+	3900000051+	1666666750+	3943988350+	3349128348+	4464414651+
1600000052+	1000000051+	1000000051+	8446843051+	1223751149+	4000000051+	2500000051+	2365116050+	2447502249+	6760980651+
1600000052+	2000000051+	2000000051+	1789368652+	1223751149+	4000000051+	1250000051+	2505116150+	1223751149+	5512749151+
1600000052+	3000000051+	3000000051+	2834052952+	1223751149+	4000000051+	8333333350+	2645116150+	8158340748+	5106003251+
1600000052+	4000000051+	4000000051+	3978737252+	1223751149+	4000000051+	6250000050+	2785116050+	6118755548+	4909630451+
1600000052+	5000000051+	5000000051+	5223421552+	1223751149+	4000000051+	5000000050+	2925116050+	4895004448+	4797406651+
1600000052+	6000000051+	6000000051+	6568105852+	1223751149+	4000000051+	4166666750+	3065116050+	4079170348+	4727257551+
1600000052+	7000000051+	7000000051+	8012790152+	1223751149+	4000000051+	3571428650+	3205116050+	3496431748+	4681150951+
1600000052+	8000000051+	8000000051+	9557474452+	1223751149+	4000000051+	3125000050+	3345116150+	3059377848+	4650071051+
1600000052+	9000000051+	9000000051+	1120215953+	1223751149+	4000000051+	2777777850+	3485116150+	2719446948+	4629008851+
1600000052+	1000000052+	1000000052+	1294684353+	1223751149+	4000000051+	2500000050+	3625116050+	2447502248+	4614959151+
1600000052+	1100000052+	1100000052+	1479152753+	1223751149+	4000000051+	2272727350+	3765116050+	2225002048+	4606009351+
1600000052+	1200000052+	1200000052+	1673621253+	1223751149+	4000000051+	2083333350+	3905116250+	2039585248+	4600884551+
1600000052+	1300000052+	1300000052+	1878089653+	1223751149+	3900000051+	1923076950+	3943988250+	1882694048+	4488589251+
1600000052+	1400000052+	1400000052+	2092558053+	1223751149+	3900000051+	1785714350+	4080488150+	1748215948+	4488368451+
1600000052+	1500000052+	1500000052+	2317026553+	1223751149+	3900000051+	1666666750+	4216988350+	1631668148+	4489997251+
1700000052+	1000000051+	1000000051+	9446843051+	5749093748+	4000000051+	2500000051+	2645116050+	1149818749+	6776009851+
1700000052+	2000000051+	2000000051+	1989368652+	5749093748+	4000000051+	1250000051+	2785116150+	5749093548+	5534260751+
1700000052+	3000000051+	3000000051+	3134052952+	5749093748+	4000000051+	8333333350+	2925116150+	3832729048+	5129677651+
1700000052+	4000000051+	4000000051+	4378737252+	5749093748+	4000000051+	6250000050+	3065116050+	2874546848+	4934386151+
1700000052+	5000000051+	5000000051+	5723421552+	5749093748+	4000000051+	5000000050+	3205116050+	2299637448+	4822811251+
1700000052+	6000000051+	6000000051+	7168105852+	5749093748+	4000000051+	4166666750+	3345116050+	1916364548+	4753094751+
1700000052+	7000000051+	7000000051+	8712790152+	5749093748+	4000000051+	3571428650+	3485116050+	1642598148+	4707297151+
1700000052+	8000000051+	8000000051+	1035747453+	5749093748+	4000000051+	3125000050+	3625115950+	1437273448+	4676448951+
1700000052+	9000000051+	9000000051+	1210215953+	5749093748+	4000000051+	2777777850+	3765116150+	1277576348+	4655567051+
1700000052+	1000000052+	1000000052+	1394684353+	5749093748+	4000000051+	2500000050+	3905116050+	1149818748+	4641661451+
1700000052+	1100000052+	1100000052+	1589152753+	5749093748+	4000000051+	2272727350+	4045116050+	1045289748+	4632829651+
1700000052+	1200000052+	1200000052+	1793621253+	5749093748+	4000000051+	2083333350+	4185116250+	9581822547+	4627803151+
1700000052+	1300000052+	1300000052+	2008089653+	5749093748+	3900000051+	1923076950+	4216988250+	8844759247+	4514891051+
1700000052+	1400000052+	1400000052+	2232558053+	5749093748+	3900000051+	1785714350+	4353488150+	8212990747+	4514741551+
1700000052+	1500000052+	1500000052+	2467026553+	5749093748+	3900000051+	1666666750+	4489988350+	7665458047+	4516432051+
1800000052+	1000000051+	1000000051+	1044684352+	2608870648+	4000000051+	2500000051+	2925116050+	5217741248+	6797729351+
1800000052+	2000000051+	2000000051+	2189368652+	2608870648+	4000000051+	1250000051+	3065116150+	2608870648+	5559120551+
1800000052+	3000000051+	3000000051+	3434052952+	2608870648+	4000000051+	8333333350+	3205116150+	1739247148+	5155584151+
1800000052+	4000000051+	4000000051+	4778737252+	2608870648+	4000000051+	6250000050+	3345116050+	1304435348+	4960816051+
1800000052+	5000000051+	5000000051+	6223421552+	2608870648+	4000000051+	5000000050+	3485116050+	1043548248+	4849555151+
1800000052+	6000000051+	6000000051+	7768105852+	2608870648+	4000000051+	4166666750+	3625116050+	8696235147+	4780047951+
1800000052+	7000000051+	7000000051+	9412790152+	2608870648+	4000000051+	3571428650+	3765116050+	7453916047+	4734399951+
1800000052+	8000000051+	8000000051+	1115747453+	2608870648+	4000000051+	3125000050+	3905115950+	6522176547+	4703663851+
1800000052+	9000000051+	9000000051+	1300215953+	2608870648+	4000000051+	2777777850+	4045116150+	5797490247+	4682869151+
1800000052+	1000000052+	1000000052+	1494684353+	2608870648+	4000000051+	2500000050+	4185116050+	5217741247+	4669030451+
1800000052+	1100000052+	1100000052+	1699152753+	2608870648+	4000000051+	2272727350+	4325116050+	4743401147+	4660258651+
1800000052+	1200000052+	1200000052+	1913621253+	2608870648+	4000000051+	2083333350+	4465116250+	4348117747+	4655279751+
1800000052+	1300000052+	1300000052+	2138089653+	2608870648+	3900000051+	1923076950+	4489988250+	4013647147+	4541707951+
1800000052+	1400000052+	1400000052+	2372558053+	2608870648+	3900000051+	1785714350+	4626488150+	3726958047+	4541592951+
1800000052+	1500000052+	1500000052+	2617026553+	2608870648+	3900000051+	1666666750+	4762988150+	3478494147+	4543313351+

1900000052+	1000000051+	1000000051+	1144684352+	1145508748+	4000000051+	2500000051+	3205116050+	2291017448+	6822802651+
1900000052+	2000000051+	2000000051+	2389368652+	1145508748+	4000000051+	1250000051+	3345116150+	1145508748+	5585657151+
1900000052+	3000000051+	3000000051+	3734052952+	1145508748+	4000000051+	8333333350+	3485116050+	7636724747+	5182608651+
1900000052+	4000000051+	4000000051+	5178737252+	1145508748+	4000000051+	6250000050+	3625116050+	5727543547+	4988084451+
1900000052+	5000000051+	5000000051+	6723421552+	1145508748+	4000000051+	5000000050+	3765116050+	4582034847+	4876969851+
1900000052+	6000000051+	6000000051+	8368105852+	1145508748+	4000000051+	4166666750+	3905116050+	3818362347+	4807560151+
1900000052+	7000000051+	7000000051+	10112790 53+	1145508748+	4000000051+	3571428650+	4045116050+	3272882047+	4761981851+
1900000052+	8000000051+	8000000051+	1195747453+	1145508748+	4000000051+	3125000050+	4185115950+	2863771847+	4731298051+
1900000052+	9000000051+	9000000051+	1390215953+	1145508748+	4000000051+	2777777850+	4325116150+	2545574947+	4710544051+
1900000052+	1000000052+	1000000052+	1594684353+	1145508748+	4000000051+	2500000050+	4465116050+	2291017447+	4696740751+
1900000052+	1100000052+	1100000052+	1809152753+	1145508748+	4000000051+	2272727350+	4605116050+	2082743147+	4687992651+
1900000052+	1200000052+	1200000052+	2033621253+	1145508748+	4000000051+	2083333350+	4745116250+	1909181247+	4683035851+
1900000052+	1300000052+	1300000052+	2268089653+	1145508748+	3900000051+	1923076950+	4762988250+	1762321147+	4568782751+
1900000052+	1400000052+	1400000052+	2512558053+	1145508748+	3900000051+	1785714350+	4899488150+	1636441047+	4568683851+
1900000052+	1500000052+	1500000052+	2767026553+	1145508748+	3900000051+	1666666750+	5035988150+	1527349947+	4570418251+
2000000052+	1000000051+	1000000051+	1244684352+	4871309247+	4000000051+	2500000051+	3485116050+	9742618447+	6849485951+
2000000052+	2000000051+	2000000051+	2589368652+	4871309247+	4000000051+	1250000051+	3625115950+	4871309247+	5612998751+
2000000052+	3000000051+	3000000051+	4034052952+	4871309247+	4000000051+	8333333350+	3765116050+	3247539347+	5210169751+
2000000052+	4000000051+	4000000051+	5578737252+	4871309247+	4000000051+	6250000050+	3905116050+	2435654647+	5015755251+
2000000052+	5000000051+	5000000051+	7223421552+	4871309247+	4000000051+	5000000050+	4045116050+	1948523747+	4904706551+
2000000052+	6000000051+	6000000051+	8968105852+	4871309247+	4000000051+	4166666750+	4185116050+	1623769747+	4835340751+
2000000052+	7000000051+	7000000051+	10812790 53+	4871309247+	4000000051+	3571428650+	4325116050+	1391802647+	4789793751+
2000000052+	8000000051+	8000000051+	1275747453+	4871309247+	4000000051+	3125000050+	4465115950+	1217827347+	4759133451+
2000000052+	9000000051+	9000000051+	1480215953+	4871309247+	4000000051+	2777777850+	4605116150+	1082513247+	4738397751+
2000000052+	1000000052+	1000000052+	1694684353+	4871309247+	4000000051+	2500000050+	4745116050+	9742618446+	4724609051+
2000000052+	1100000052+	1100000052+	1919152753+	4871309247+	4000000051+	2272727350+	4885116050+	8856925846+	4715872951+
2000000052+	1200000052+	1200000052+	2153621253+	4871309247+	4000000051+	2083333350+	5025116250+	8118848746+	4710926151+
2000000052+	1300000052+	1300000052+	2398089653+	4871309247+	3900000051+	1923076950+	5035988250+	7494321846+	4595981451+
2000000052+	1400000052+	1400000052+	2652558053+	4871309247+	3900000051+	1785714350+	5172488050+	6959013146+	4595889851+
2000000052+	1500000052+	1500000052+	2917026553+	4871309247+	3900000051+	1666666750+	5308988150+	6495078946+	4597630551+
2100000052+	1000000051+	1000000051+	1344684352+	2008613847+	4000000051+	2500000051+	3765116050+	4017227647+	6876913351+
2100000052+	2000000051+	2000000051+	2789368652+	2008613847+	4000000051+	1250000051+	3905115950+	2008613847+	5640712551+
2100000052+	3000000051+	3000000051+	4334052952+	2008613847+	4000000051+	8333333350+	4045116050+	1339075947+	5237978851+
2100000052+	4000000051+	4000000051+	5978737252+	2008613847+	4000000051+	6250000050+	4185116050+	1004306947+	5043612051+
2100000052+	5000000051+	5000000051+	7723421552+	2008613847+	4000000051+	5000000050+	4325116050+	8034455246+	4932591951+
2100000052+	6000000051+	6000000051+	9568105852+	2008613847+	4000000051+	4166666750+	4465116050+	6695379346+	4863245351+
2100000052+	7000000051+	7000000051+	1151279053+	2008613847+	4000000051+	3571428650+	4605116050+	5738896646+	4817711951+
2100000052+	8000000051+	8000000051+	1355747453+	2008613847+	4000000051+	3125000050+	4745115950+	5021534546+	4787061851+
2100000052+	9000000051+	9000000051+	1570215953+	2008613847+	4000000051+	2777777850+	4885116150+	4463586246+	4766334051+
2100000052+	1000000052+	1000000052+	1794684353+	2008613847+	4000000051+	2500000050+	5025116050+	4017227646+	4752551851+
2100000052+	1100000052+	1100000052+	2029152753+	2008613847+	4000000051+	2272727350+	5165116050+	3652025146+	4743820851+
2100000052+	1200000052+	1200000052+	2273621253+	2008613847+	4000000051+	2083333350+	5305116250+	3347689746+	4738878451+
2100000052+	1300000052+	1300000052+	2528089653+	2008613847+	3900000051+	1923076950+	5308988250+	3090175146+	4623237451+
2100000052+	1400000052+	1400000052+	2792558053+	2008613847+	3900000051+	1785714350+	5445488050+	2869448346+	4623148951+
2100000052+	1500000052+	1500000052+	3067026553+	2008613847+	3900000051+	1666666750+	5581988150+	2678151746+	4624892351+
2200000052+	1000000051+	1000000051+	1444684352+	8036540746+	4000000051+	2500000051+	4045116050+	1607308147+	6904672351+
2200000052+	2000000051+	2000000051+	2989368652+	8036540746+	4000000051+	1250000051+	4185115950+	8036540546+	5668592051+
2200000052+	3000000051+	3000000051+	4634052952+	8036540746+	4000000051+	8333333350+	4325116050+	5357693746+	5265898551+
2200000052+	4000000051+	4000000051+	6378737252+	8036540746+	4000000051+	6250000050+	4465116050+	4018270346+	5071551851+
2200000052+	5000000051+	5000000051+	8223421552+	8036540746+	4000000051+	5000000050+	4605116050+	3214616246+	4960543751+
2200000052+	6000000051+	6000000051+	1016810653+	8036540746+	4000000051+	4166666750+	4745116250+	2678846846+	4891205151+
2200000052+	7000000051+	7000000051+	1221279053+	8036540746+	4000000051+	3571428650+	4885116050+	2296154446+	4845677551+
2200000052+	8000000051+	8000000051+	1435747453+	8036540746+	4000000051+	3125000050+	5025115950+	2009135146+	4815031751+
2200000052+	9000000051+	9000000051+	1660215953+	8036540746+	4000000051+	2777777850+	5165116150+	1785897946+	4794307351+
2200000052+	1000000052+	1000000052+	1894684353+	8036540746+	4000000051+	2500000050+	5305116050+	1607308146+	4780527751+
2200000052+	1100000052+	1100000052+	2139152753+	8036540746+	4000000051+	2272727350+	5445116050+	1461189246+	4771798951+
2200000052+	1200000052+	1200000052+	2393621253+	8036540746+	4000000051+	2083333350+	5585116250+	1339423446+	4766858351+
2200000052+	1300000052+	1300000052+	2658089653+	8036540746+	3900000051+	1923076950+	5581987950+	1236390846+	4650518951+
2200000052+	1400000052+	1400000052+	2932558053+	8036540746+	3900000051+	1785714350+	5718488050+	1148077246+	4650431751+
2200000052+	1500000052+	1500000052+	3217026553+	8036540746+	3900000051+	1666666750+	5854988150+	1071538746+	4652176251+
2300000052+	1000000051+	1000000051+	1544684352+	3103643146+	4000000051+	2500000051+	4325116050+	6207286246+	6932573751+
2300000052+	2000000051+	2000000051+	3189368652+	3103643146+	4000000051+	1250000051+	4465115950+	3103643146+	5696542651+
2300000052+	3000000051+	3000000051+	4934052952+	3103643146+	4000000051+	8333333350+	4605116050+	2069095446+	5293865651+
2300000052+	4000000051+	4000000051+	6778737252+	3103643146+	4000000051+	6250000050+	4745116050+	1551821646+	5099527151+
2300000052+	5000000051+	5000000051+	8723421552+	3103643146+	4000000051+	5000000050+	4885116050+	1241457246+	4988524051+
2300000052+	6000000051+	6000000051+	1076810653+	3103643146+	4000000051+	4166666750+	5025116250+	1034547746+	4919188651+
2300000052+	7000000051+	7000000051+	1291279053+	3103643146+	4000000051+	3571428650+	5165116050+	8867551745+	4873663451+
2300000052+	8000000051+	8000000051+	1515747453+	3103643146+	4000000051+	3125000050+	5305115950+	7759107845+	4843019451+
2300000052+	9000000051+	9000000051+	1750215953+	3103643146+	4000000051+	2777777850+	5445116150+	6896984745+	4822296351+
2300000052+	1000000052+	1000000052+	1994684353+	3103643146+	4000000051+	2500000050+	5585116050+	6207286245+	4808517851+
2300000052+	1100000052+	1100000052+	2249152753+	3103643146+	4000000051+	2272727350+	5725116050+	5642987545+	4799789951+
2300000052+	1200000052+	1200000052+	2513621253+	3103643146+	4000000051+	2083333350+	5865116350+	5172738545+	4794850151+
2300000052+	1300000052+	1300000052+	2788089653+	3103643146+	3900000051+	1923076950+	5854987950+	4774835545+	4677811351+
2300000052+	1400000052+	1400000052+	3072558053+	3103643146+	3900000051+	1785714350+	5991488050+	4433775945+	4677724651+
2300000052+	1500000052+	1500000052+	3367026553+	3103643146+	3900000051+	1666666750+	6127988150+	4138190845+	4679469651+
2400000052+	1000000051+	1000000051+	1644684352+	1146976246+	4000000051+	2500000051+	4605116050+	2293952446+	6960534551+
2400000052+	2000000051+	2000000051+	3389368652+	1146976246+	4000000051+	1250000051+	4745115950+	1146976246+	5724523151+
2400000052+	3000000051+	3000000051+	5234052952+	1146976246+	4000000051+	8333333350+	4885116050+	7646508045+	5321852551+
2400000052+	4000000051+	4000000051+	7178737252+	1146976246+	4000000051+	6250000050+	5025116050+	5734881045+	5127517351+
2400000052+	5000000051+	5000000051+	9223421552+	1146976246+	4000000051+	5000000050+	5165116050+	4587904845+	5016516251+
2400000052+	6000000051+	6000000051+	1136810653+	1146976246+	4000000051+	4166666750+	5305116250+	3823254045+	4947182151+
2400000052+	7000000051+	7000000051+	1361279053+	1146976246+	4000000051+	3571428650+	5445116050+	3277074945+	4901657851+
2400000052+	8000000051+	8000000051+	1595747453+	1146976246+	4000000051+	3125000050+	5585115950+	2867440545+	4871014551+
2400000052+	9000000051+	9000000051+	1840215953+	1146976246+	4000000051+	2777777850+	5725116150+	2548836045+	4850291951+
2400000052+	1000000052+	1000000052+	2094684353+	1146976246+	4000000051+	2500000050+	5865116050+	2293952445+	4836513951+
2400000052+	1100000052+	1100000052+	2359152753+	1146976246+	4000000051+	2272727350+	6005116050+	2085411345+	4827786451+
2400000052+	1200000052+	1200000052+	2633621253+	1146976246+	4000000051+	2083333350+	6145116350+	1911627045+	4822846851+
2400000052+	1300000052+	1300000052+	2918089653+	1146976246+	3900000051+	1923076950+	6127987950+	1764578845+	4705100351+
2400000052+	1400000052+	1400000052+	3212558053+	1146976246+	3900000051+	1785714350+	6264488050+	1638537445+	4705021851+
2400000052+	1500000052+	1500000052+	3517026553+	1146976246+	3900000051+	1666666750+	6400988150+	1529301645+	4706767051+
2500000052+	1000000051+	1000000051+	1744684352+	4017003345+	4000000051+	2500000051+	4885116050+	8034006645+	6988519651+
2500000052+	2000000051+	2000000051+	3589368652+	4017003345+	4000000051+	1250000051+	5025116050+	4017003345+	5752515651+
2500000052+	3000000051+	3000000051+	5534052952+	4017003345+	4000000051+	8333333350+	5165116050+	2678002245+	5349847651+
2500000052+	4000000051+	4000000051+	7578737252+	4017003345+	4000000051+	6250000050+	5305116050+	2008501745+	5155513651+
2500000052+	5000000051+	5000000051+	9723421552+	4017003345+	4000000051+	5000000050+	5445116050+	1606801345+	5044513251+
2500000052+	6000000051+	6000000051+	1196810653+	4017003345+	4000000051+	4166666750+	5585116250+	1339001145+	4975179651+
2500000052+	7000000051+	7000000051+	1431279053+	4017003345+	4000000051+	3571428650+	5725116050+	1147715245+	4929655651+
2500000052+	8000000051+	8000000051+	1675747453+	4017003345+	4000000051+	3125000050+	5865115950+	1004250845+	4899012651+
2500000052+	9000000051+	9000000051+	1930215953+	4017003345+	4000000051+	2777777850+	6005116150+	8926670444+	4878290351+
2500000052+	1000000052+	1000000052+	2194684353+	4017003345+	4000000051+	2500000050+	6145116050+	8034006644+	4864512451+
2500000052+	1100000052+	1100000052+	2469152753+	4017003345+	4000000051+	2272727350+	6285116050+	7303642444+	4855785051+
2500000052+	1200000052+	1200000052+	2753621253+	4017003345+	4000000051+	2083333350+	6425116350+	6695005544+	4850845651+
2500000052+	1300000052+	1300000052+	3048089653+	4017003345+	3900000051+	1923076950+	6400987950+	6180005144+	4732407151+
2500000052+	1400000052+	1400000052+	3352558053+	4017003345+	3900000051+	1785714350+	6537488050+	5738576144+	4732320851+
2500000052+	1500000052+	1500000052+	3667026553+	4017003345+	3900000051+	1666666750+	6673988050+	5356004444+	4734066051+
2600000052+	1000000051+	1000000051+	1844684352+	1373767545+	4000000051+	2500000051+	5165116050+	2747535045+	7016514351+
2600000052+	2000000051+	2000000051+	3789368652+	1373767545+	4000000051+	1250000051+	5305116050+	1373767545+	5780513051+
2600000052+	3000000051+	3000000051+	5834052952+	1373767545+	4000000051+	8333333350+	5445116050+	9158450044+	5377845851+

```
2600000052+ 4000000051+ 4000000051+ 7978737252+ 1373767545+ 4000000051+ 6250000050+ 5585116050+ 6868837544+ 5183512351+
2600000052+ 5000000051+ 5000000051+ 1022342253+ 1373767545+ 4000000051+ 5000000050+ 5725116450+ 5495070044+ 5072512151+
2600000052+ 6000000051+ 6000000051+ 1256810653+ 1373767545+ 4000000051+ 4166666750+ 5865116250+ 4579225044+ 5003178851+
2600000052+ 7000000051+ 7000000051+ 1501279053+ 1373767545+ 4000000051+ 3571428650+ 6005116050+ 3925050044+ 4957654951+
2600000052+ 8000000051+ 8000000051+ 1755747453+ 1373767545+ 4000000051+ 3125000050+ 6145115950+ 3434418844+ 4927011951+
2600000052+ 9000000051+ 9000000051+ 2020215953+ 1373767545+ 4000000051+ 2777777850+ 6285116150+ 3052816744+ 4906289751+
2600000052+ 1000000052+ 1000000052+ 2294684353+ 1373767545+ 4000000051+ 2500000050+ 6425116050+ 2747535044+ 4892511951+
2600000052+ 1100000052+ 1100000052+ 2579152753+ 1373767545+ 4000000051+ 2272727350+ 6565116150+ 2497759144+ 4883784551+
2600000052+ 1200000052+ 1200000052+ 2873621253+ 1373767545+ 4000000051+ 2083333350+ 6705116350+ 2289612544+ 4878845151+
2600000052+ 1300000052+ 1300000052+ 3178089653+ 1373767545+ 3900000051+ 1923076950+ 6673987950+ 2113488544+ 4759706751+
2600000052+ 1400000052+ 1400000052+ 3492558053+ 1373767545+ 3900000051+ 1785714350+ 6810488050+ 1962525044+ 4759620451+
2600000052+ 1500000052+ 1500000052+ 3817026553+ 1373767545+ 3900000051+ 1666666750+ 6946988050+ 1831690044+ 4761365751+
2700000052+ 1000000051+ 1000000051+ 1944684352+ 4019475344+ 4000000051+ 2500000051+ 5445116050+ 8038950644+ 7044512451+
2700000052+ 2000000051+ 2000000051+ 3989386852+ 4019475344+ 4000000051+ 1250000051+ 5585116050+ 4019475344+ 5808512051+
2700000052+ 3000000051+ 3000000051+ 6134052952+ 4019475344+ 4000000051+ 8333333350+ 5725116050+ 2679650244+ 5405845251+
2700000052+ 4000000051+ 4000000051+ 8379737252+ 4019475344+ 4000000051+ 6250000050+ 5865116050+ 2009737744+ 5211511851+
2700000052+ 5000000051+ 5000000051+ 1072342253+ 4019475344+ 4000000051+ 5000000050+ 6005116450+ 1607790144+ 5100511851+
2700000052+ 6000000051+ 6000000051+ 1316810653+ 4019475344+ 4000000051+ 4166666750+ 6145116250+ 1339825144+ 5031178451+
2700000052+ 7000000051+ 7000000051+ 1571279053+ 4019475344+ 4000000051+ 3571428650+ 6285116050+ 1148421544+ 4985654651+
2700000052+ 8000000051+ 8000000051+ 1835747453+ 4019475344+ 4000000051+ 3125000050+ 6425115950+ 1004868844+ 4955011751+
2700000052+ 9000000051+ 9000000051+ 2110215953+ 4019475344+ 4000000051+ 2777777850+ 6565116150+ 8932167343+ 4934289551+
2700000052+ 1000000052+ 1000000052+ 2394684353+ 4019475344+ 4000000051+ 2500000050+ 6705116050+ 8038950643+ 4920511751+
2700000052+ 1100000052+ 1100000052+ 2689152753+ 4019475344+ 4000000051+ 2272727350+ 6845116150+ 7308136943+ 4911784451+
2700000052+ 1200000052+ 1200000052+ 2993621253+ 4019475344+ 4000000051+ 2083333350+ 6985116350+ 6699125543+ 4906845051+
2700000052+ 1300000052+ 1300000052+ 3308089653+ 4019475344+ 3900000051+ 1923076950+ 6946987950+ 6183808243+ 4787006651+
2700000052+ 1400000052+ 1400000052+ 3632558053+ 4019475344+ 3900000051+ 1785714350+ 7083488050+ 5742107643+ 4786920351+
2700000052+ 1500000052+ 1500000052+ 3967026553+ 4019475344+ 3900000051+ 1666666750+ 7219988050+ 5359300443+ 4788665651+
2800000052+ 1000000051+ 1000000051+ 2044684352+ 1333648444+ 4000000051+ 2500000051+ 5725116050+ 2667296844+ 7072511951+
2800000052+ 2000000051+ 2000000051+ 4189368652+ 1333648444+ 4000000051+ 1250000051+ 5865116050+ 1333648444+ 5836511751+
2800000052+ 3000000051+ 3000000051+ 6434052952+ 1333648444+ 4000000051+ 8333333350+ 6005116050+ 8890989343+ 5433845051+
2800000052+ 4000000051+ 4000000051+ 8778737252+ 1333648444+ 4000000051+ 6250000050+ 6145116050+ 6668242043+ 5239511751+
2800000052+ 5000000051+ 5000000051+ 1122342253+ 1333648444+ 4000000051+ 5000000050+ 6285116450+ 5334593643+ 5128511751+
2800000052+ 6000000051+ 6000000051+ 1376810653+ 1333648444+ 4000000051+ 4166666750+ 6425116250+ 4445494743+ 5059178351+
2800000052+ 7000000051+ 7000000051+ 1641279053+ 1333648444+ 4000000051+ 3571428650+ 6565116050+ 3810424043+ 5013654551+
2800000052+ 8000000051+ 8000000051+ 1915747453+ 1333648444+ 4000000051+ 3125000050+ 6705115950+ 3334121043+ 4983011651+
2800000052+ 9000000051+ 9000000051+ 2200215953+ 1333648444+ 4000000051+ 2777777850+ 6845116150+ 2963663143+ 4962289451+
2800000052+ 1000000052+ 1000000052+ 2494684353+ 1333648444+ 4000000051+ 2500000050+ 6985116050+ 2667296843+ 4948511651+
2800000052+ 1100000052+ 1100000052+ 2799152753+ 1333648444+ 4000000051+ 2272727350+ 7125116150+ 2424815343+ 4939784351+
2800000052+ 1200000052+ 1200000052+ 3113621253+ 1333648444+ 4000000051+ 2083333350+ 7265116350+ 2222747343+ 4934844951+
2800000052+ 1300000052+ 1300000052+ 3438089653+ 1333648444+ 3900000051+ 1923076950+ 7219987950+ 2051766843+ 4814306551+
2800000052+ 1400000052+ 1400000052+ 3772558053+ 1333648444+ 3900000051+ 1785714350+ 7356487950+ 1905212043+ 4814220251+
2800000052+ 1500000052+ 1500000052+ 4117026553+ 1333648444+ 3900000051+ 1666666750+ 7492988050+ 1778197943+ 4815965551+
2900000052+ 1000000051+ 1000000051+ 2144684352+ 2045405243+ 4000000051+ 2500000051+ 6005116050+ 4090810443+ 7100511651+
2900000052+ 2000000051+ 2000000051+ 4389368652+ 2045405243+ 4000000051+ 1250000051+ 6145116050+ 2045405243+ 5864511651+
2900000052+ 3000000051+ 3000000051+ 6734052952+ 2045405243+ 4000000051+ 8333333350+ 6285116050+ 1363603543+ 5461844951+
2900000052+ 4000000051+ 4000000051+ 9178737252+ 2045405243+ 4000000051+ 6250000050+ 6425116050+ 1022702643+ 5267511651+
2900000052+ 5000000051+ 5000000051+ 1172342253+ 2045405243+ 4000000051+ 5000000050+ 6565116450+ 8181620842+ 5156511651+
2900000052+ 6000000051+ 6000000051+ 1436810653+ 2045405243+ 4000000051+ 4166666750+ 6705116250+ 6818017342+ 5087178351+
2900000052+ 7000000051+ 7000000051+ 1711279053+ 2045405243+ 4000000051+ 3571428650+ 6845116050+ 5844014942+ 5041654551+
2900000052+ 8000000051+ 8000000051+ 1995747453+ 2045405243+ 4000000051+ 3125000050+ 6985115950+ 5113513042+ 5011011651+
2900000052+ 9000000051+ 9000000051+ 2290215953+ 2045405243+ 4000000051+ 2777777850+ 7125116150+ 4545344942+ 4990289451+
2900000052+ 1000000052+ 1000000052+ 2594684353+ 2045405243+ 4000000051+ 2500000050+ 7265115950+ 4090810442+ 4976511651+
2900000052+ 1100000052+ 1100000052+ 2909152753+ 2045405243+ 4000000051+ 2272727350+ 7405116150+ 3718918542+ 4967784351+
2900000052+ 1200000052+ 1200000052+ 3233621253+ 2045405243+ 4000000051+ 2083333350+ 7545116350+ 3409008742+ 4962844951+
2900000052+ 1300000052+ 1300000052+ 3568089653+ 2045405243+ 3900000051+ 1923076950+ 7492987950+ 3146777242+ 4841606551+
2900000052+ 1400000052+ 1400000052+ 3912558053+ 2045405243+ 3900000051+ 1785714350+ 7629487950+ 2922007442+ 4841520251+
2900000052+ 1500000052+ 1500000052+ 4267026553+ 2045405243+ 3900000051+ 1666666750+ 7765988050+ 2727206942+ 4843265551+
3000000052+ 1000000051+ 1000000051+ 2244684352+ 4244010942+ 4000000051+ 2500000051+ 6285116050+ 8488021842+ 7128511651+
3000000052+ 2000000051+ 2000000051+ 4589368652+ 4244010942+ 4000000051+ 1250000051+ 6425116050+ 4244010942+ 5892511651+
3000000052+ 3000000051+ 3000000051+ 7034052952+ 4244010942+ 4000000051+ 8333333350+ 6565116050+ 2829340642+ 5489844951+
3000000052+ 4000000051+ 4000000051+ 9578737252+ 4244010942+ 4000000051+ 6250000050+ 6705116050+ 2122005542+ 5295511651+
3000000052+ 5000000051+ 5000000051+ 1222342253+ 4244010942+ 4000000051+ 5000000050+ 6845116450+ 1697604442+ 5184511651+
3000000052+ 6000000051+ 6000000051+ 1496810653+ 4244010942+ 4000000051+ 4166666750+ 6985116250+ 1414670342+ 5115178351+
3000000052+ 7000000051+ 7000000051+ 1781279053+ 4244010942+ 4000000051+ 3571428650+ 7125116050+ 1212574542+ 5069654551+
3000000052+ 8000000051+ 8000000051+ 2075747453+ 4244010942+ 4000000051+ 3125000050+ 7265115950+ 1061002742+ 5039011651+
3000000052+ 9000000051+ 9000000051+ 2380215953+ 4244010942+ 4000000051+ 2777777850+ 7405116150+ 9431135341+ 5018289451+
3000000052+ 1000000052+ 1000000052+ 2694684353+ 4244010942+ 4000000051+ 2500000050+ 7545115950+ 8488021841+ 5004511651+
3000000052+ 1100000052+ 1100000052+ 3019152753+ 4244010942+ 4000000051+ 2272727350+ 7685116150+ 7716383541+ 4995784351+
3000000052+ 1200000052+ 1200000052+ 3353621253+ 4244010942+ 4000000051+ 2083333350+ 7825116350+ 7073351541+ 4990844951+
3000000052+ 1300000052+ 1300000052+ 3698089653+ 4244010942+ 3900000051+ 1923076950+ 7765987750+ 6529247541+ 4868906551+
3000000052+ 1400000052+ 1400000052+ 4052558053+ 4244010942+ 3900000051+ 1785714350+ 7902487950+ 6062872741+ 4868820251+
3000000052+ 1500000052+ 1500000052+ 4417026553+ 4244010942+ 3900000051+ 1666666750+ 8038988050+ 5658681241+ 4870565551+
3100000052+ 1000000051+ 1000000051+ 2344684352+ 1212503142+ 4000000051+ 2500000051+ 6565116050+ 2425006242+ 7156511651+
3100000052+ 2000000051+ 2000000051+ 4789368652+ 1212503142+ 4000000051+ 1250000051+ 6705116050+ 1212503142+ 5920511651+
3100000052+ 3000000051+ 3000000051+ 7334052952+ 1212503142+ 4000000051+ 8333333350+ 6845116050+ 8083540441+ 5517844951+
3100000052+ 4000000051+ 4000000051+ 9978737252+ 1212503142+ 4000000051+ 6250000050+ 6985116050+ 6062515541+ 5323511651+
3100000052+ 5000000051+ 5000000051+ 1272342253+ 1212503142+ 4000000051+ 5000000050+ 7125116450+ 4850012441+ 5212511651+
3100000052+ 6000000051+ 6000000051+ 1556810653+ 1212503142+ 4000000051+ 4166666750+ 7265116250+ 4041677041+ 5143178351+
3100000052+ 7000000051+ 7000000051+ 1851279053+ 1212503142+ 4000000051+ 3571428650+ 7405116050+ 3464294641+ 5097654551+
3100000052+ 8000000051+ 8000000051+ 2155747453+ 1212503142+ 4000000051+ 3125000050+ 7545115950+ 3031257841+ 5067011651+
3100000052+ 9000000051+ 9000000051+ 2470215953+ 1212503142+ 4000000051+ 2777777850+ 7685116150+ 2694451341+ 5046289451+
3100000052+ 1000000052+ 1000000052+ 2794684353+ 1212503142+ 4000000051+ 2500000050+ 7825115950+ 2425006241+ 5032511651+
3100000052+ 1100000052+ 1100000052+ 3129152753+ 1212503142+ 4000000051+ 2272727350+ 7965116150+ 2204551141+ 5023784351+
3100000052+ 1200000052+ 1200000052+ 3473621253+ 1212503142+ 4000000051+ 2083333350+ 8105116350+ 2020838541+ 5018844951+
3100000052+ 1300000052+ 1300000052+ 3828089653+ 1212503142+ 3900000051+ 1923076950+ 8038987750+ 1865389441+ 4896206551+
3100000052+ 1400000052+ 1400000052+ 4192558053+ 1212503142+ 3900000051+ 1785714350+ 8175487950+ 1732147341+ 4896120251+
3100000052+ 1500000052+ 1500000052+ 4567026553+ 1212503142+ 3900000051+ 1666666750+ 8311988050+ 1616670841+ 4897865551+
3200000052+ 1000000051+ 1000000051+ 2444684352+ 1515003941+ 4000000051+ 2500000051+ 6845116050+ 3030007841+ 7184511651+
3200000052+ 2000000051+ 2000000051+ 4989368652+ 1515003941+ 4000000051+ 1250000051+ 6985116050+ 1515003941+ 5948511651+
3200000052+ 3000000051+ 3000000051+ 7634052952+ 1515003941+ 4000000051+ 8333333350+ 7125116050+ 1010002641+ 5545844951+
3200000052+ 4000000051+ 4000000051+ 1037873753+ 1515003941+ 4000000051+ 6250000050+ 7265116050+ 7575019540+ 5351511651+
3200000052+ 5000000051+ 5000000051+ 1322342253+ 1515003941+ 4000000051+ 5000000050+ 7405116450+ 6060015640+ 5240511651+
3200000052+ 6000000051+ 6000000051+ 1616810653+ 1515003941+ 4000000051+ 4166666750+ 7545116250+ 5050013040+ 5171178351+
3200000052+ 7000000051+ 7000000051+ 1921279053+ 1515003941+ 4000000051+ 3571428650+ 7685116050+ 4328582640+ 5125654551+
3200000052+ 8000000051+ 8000000051+ 2235747453+ 1515003941+ 4000000051+ 3125000050+ 7825115950+ 3787509840+ 5095011651+
3200000052+ 9000000051+ 9000000051+ 2560215953+ 1515003941+ 4000000051+ 2777777850+ 7965116450+ 3366675340+ 5074289451+
3200000052+ 1000000052+ 1000000052+ 2894684353+ 1515003941+ 4000000051+ 2500000050+ 8105115950+ 3030007840+ 5060511651+
3200000052+ 1100000052+ 1100000052+ 3239152753+ 1515003941+ 4000000051+ 2272727350+ 8245116150+ 2754552540+ 5051784351+
3200000052+ 1200000052+ 1200000052+ 3593621253+ 1515003941+ 4000000051+ 2083333350+ 8385116750+ 2525006540+ 5046845051+
3200000052+ 1300000052+ 1300000052+ 3958089653+ 1515003941+ 3900000051+ 1923076950+ 8311987750+ 2330775240+ 4923506551+
3200000052+ 1400000052+ 1400000052+ 4332558053+ 1515003941+ 3900000051+ 1785714350+ 8448487950+ 2164291340+ 4923420251+
3200000052+ 1500000052+ 1500000052+ 4717026553+ 1515003941+ 3900000051+ 1666666750+ 8584988050+ 2020005240+ 4925165551+
3300000052+ 1000000051+ 1000000051+ 2544684352+ 5050012940+ 4000000051+ 2500000051+ 7125115950+ 1010002641+ 7212511651+
3300000052+ 2000000051+ 2000000051+ 5189368652+ 5050012940+ 4000000051+ 1250000051+ 7265116050+ 5050013040+ 5976511651+
3300000052+ 3000000051+ 3000000051+ 7934052952+ 5050012940+ 4000000051+ 8333333350+ 7405116050+ 3366675340+ 5573844951+
3300000052+ 4000000051+ 4000000051+ 1077873753+ 5050012940+ 4000000051+ 6250000050+ 7545116050+ 2525006540+ 5379511651+
3300000052+ 5000000051+ 5000000051+ 1372342253+ 5050012940+ 4000000051+ 5000000050+ 7685116450+ 2020005240+ 5268511651+
3300000052+ 6000000051+ 6000000051+ 1676810653+ 5050012940+ 4000000051+ 4166666750+ 7825116250+ 1683337740+ 5199178351+
```

3300000052+	7000000051+	7000000051+	1991279053+	5050012940+	4000000051+	3571428650+	7965116050+	1442860940+	5153654551+
3300000052+	8000000051+	8000000051+	2315747453+	5050012940+	4000000051+	3125000050+	8105115950+	1262503340+	5123011651+
3300000052+	9000000051+	9000000051+	2650215953+	5050012940+	4000000051+	2777777850+	8245116450+	1122225140+	5102289451+
3300000052+	1000000052+	1000000052+	2994684353+	5050012940+	4000000051+	2500000050+	8385115950+	1010002640+	5088511651+
3300000052+	1100000052+	1100000052+	3349152753+	5050012940+	4000000051+	2272727350+	8525116150+	9181841839+	5079784351+
3300000052+	1200000052+	1200000052+	3713621253+	5050012940+	4000000051+	2083333350+	8665116750+	8416688339+	5074845051+
3300000052+	1300000052+	1300000052+	4088089653+	5050012940+	3900000051+	1923076950+	8584987750+	7769250839+	4950806551+
3300000052+	1400000052+	1400000052+	4472558053+	5050012940+	3900000051+	1785714350+	8721487950+	7214304339+	4950720251+
3300000052+	1500000052+	1500000052+	4867026553+	5050012940+	3900000051+	1666666750+	8857988050+	6733350739+	4952465551+
3400000052+	1000000051+	1000000051+	2644684352+		4000000051+	2500000051+	7405115950+		7240511651+
3400000052+	2000000051+	2000000051+	5389368652+		4000000051+	1250000051+	7545116050+		6004511651+
3400000052+	3000000051+	3000000051+	8234052952+		4000000051+	8333333350+	7685116050+		5601844951+
3400000052+	4000000051+	4000000051+	1117873753+		4000000051+	6250000050+	7825116050+		5407511651+
3400000052+	5000000051+	5000000051+	1422342253+		4000000051+	5000000050+	7965116450+		5296511651+
3400000052+	6000000051+	6000000051+	1736810653+		4000000051+	4166666750+	8105116250+		5227178351+
3400000052+	7000000051+	7000000051+	2061279053+		4000000051+	3571428650+	8245116050+		5181654551+
3400000052+	8000000051+	8000000051+	2395747453+		4000000051+	3125000050+	8385115950+		5151011651+
3400000052+	9000000051+	9000000051+	2740215953+		4000000051+	2777777850+	8525116450+		5130289451+
3400000052+	1000000052+	1000000052+	3094684353+		4000000051+	2500000050+	8665115950+		5116511651+
3400000052+	1100000052+	1100000052+	3459152753+		4000000051+	2272727350+	8805116150+		5107784351+
3400000052+	1200000052+	1200000052+	3833621253+		4000000051+	2083333350+	8945116750+		5102845051+
3400000052+	1300000052+	1300000052+	4218089653+		3900000051+	1923076950+	8857987750+		4978106551+
3400000052+	1400000052+	1400000052+	4612558053+		3900000051+	1785714350+	8994487950+		4978020251+
3400000052+	1500000052+	1500000052+	5017026553+		3900000051+	1666666750+	9130988050+		4979765551+

OUTPUT SURFACE - SOURCE 2

PL	PQ	PF	TS	SSUBM	IC	PC	HC	SC	TC
	1000000051+	1000000051+		7187939351+	4000000051+	2300000051+		1437587952+	2067587952+
	2000000051+	2000000051+		7187939351+	4000000051+	1150000051+		7187939551+	1233794052+
	3000000051+	3000000051+		7187939351+	4000000051+	7666666750+		4791959751+	9558626451+
	4000000051+	4000000051+		7187939351+	4000000051+	5750000050+		3593969851+	8168969851+
	5000000051+	5000000051+		7187939351+	4000000051+	4600000050+		2875175851+	7335175851+
	6000000051+	6000000051+		7187939351+	4000000051+	3833333350+		2395979851+	6779313151+
	7000000051+	7000000051+		7187939351+	4000000051+	3285714350+		2053697051+	6382268451+
	8000000051+	8000000051+	3297385950+	7187939351+	4000000051+	2875000050+	1154085148+	1796984951+	6085639051+
	9000000051+	9000000051+	1641820651+	7187939351+	4000000051+	2555555650+	5107886348+	1597319951+	5857983451+
	1000000052+	1000000052+	3953902651+	7187939351+	4000000051+	2300000050+	1107092749+	1437587951+	5678658851+
	1100000052+	1100000052+	7265984551+	7187939351+	4000000051+	2090909150+	1849523449+	1306898151+	5534484251+
	1200000052+	1200000052+	1157806752+	7187939351+	4000000051+	1916666750+	2701549049+	1197989951+	5416672151+
	1300000052+	1300000052+	1689014952+	7187939351+	4000000051+	1769230850+	3637878249+	1105836851+	5319138751+
	1400000052+	1400000052+	2320223152+	7187939351+	4000000051+	1642857150+	4640446249+	1026848551+	5237538751+
	1500000052+	1500000052+	3051431352+	7187939351+	4000000051+	1533333350+	5696005049+	9583919350+	5168685351+
	1600000052+	1600000052+	3882639552+	7187939351+	4000000051+	1437500050+	6794619449+	8984924450+	5110188651+
	1700000052+	1700000052+	4813847752+	7187939351+	4000000051+	1352941250+	7928690649+	8456399450+	5060220951+
	1800000052+	1800000052+	5845056052+	7187939351+	4000000051+	1277777850+	9092309449+	7986599450+	5017360851+
	1900000052+	1900000052+	6976264052+	7187939351+	4000000051+	1210526350+	1028081050+	7566252150+	4980485951+
	2000000052+	2000000052+	8207472552+	7187939351+	4000000051+	1150000050+	1149046250+	7187939550+	4948698651+
	2100000052+	2100000052+	9538680552+	7187939351+	4000000051+	1095238150+	1271824050+	6845656750+	4921271951+
	2200000052+	2200000052+	1096988953+	7187939351+	4000000051+	1045454550+	1396167750+	6534490550+	4897611451+
	2300000052+	2300000052+	1250109753+	7187939351+	4000000051+	1000000050+	1521872750+	6250382250+	4877225551+
	2400000052+	2400000052+	1413230553+	7187939351+	4000000051+	9583333349+	1648768950+	5989949650+	4859705251+
	2500000052+	2500000052+	1586351453+	7187939351+	4000000051+	9200000049+	1776713650+	5750351650+	4844706651+
	2600000052+	2600000052+	1769472253+	7187939351+	4000000051+	8846153849+	1905585550+	5529184250+	4831938551+
	2700000052+	2700000052+	1962593053+	7187939351+	4000000051+	8518518549+	2035281650+	5324399650+	4821153451+
	2800000052+	2800000052+	2165713853+	7187939351+	4000000051+	8214285749+	2165713850+	5134242550+	4812138651+
	2900000052+	2900000052+	2378834653+	7187939351+	4000000051+	7931034549+	2296805850+	4957199750+	4804710951+
	3000000052+	3000000052+	2601955553+	7187939351+	4000000051+	7666666749+	2428491850+	4791959750+	4798711951+
	3100000052+	3100000052+	2835076353+	7187939351+	4000000051+	7419354849+	2560714050+	4637380350+	4794002951+
	3200000052+	3200000052+	3078197153+	7187939351+	4000000051+	7187500049+	2693422450+	4492462250+	4790463451+
	3300000052+	3300000052+	3331317953+	7187939351+	4000000051+	6969697049+	2826572850+	4356327050+	4787987051+
	3400000052+	3400000052+	3594438753+	7187939351+	4000000051+	6764705949+	2960126250+	4228199750+	4786479751+
	3500000052+	3500000052+	3867559653+	7187939351+	4000000051+	6571428649+	3094047750+	4107394050+	4785858551+
	3600000052+	3600000052+	4150680453+	7187939351+	4000000051+	6388888949+	3228306950+	3993299750+	4786049651+
1000000051+	1000000051+	1000000051+		6190154051+	4000000051+	2300000051+		1238030852+	1868030852+
1000000051+	2000000051+	2000000051+		6190154051+	4000000051+	1150000051+		6190154051+	1134015452+
1000000051+	3000000051+	3000000051+		6190154051+	4000000051+	7666666750+		4126769351+	8893436051+
1000000051+	4000000051+	4000000051+		6190154051+	4000000051+	5750000050+		3095077051+	7670077051+
1000000051+	5000000051+	5000000051+		6190154051+	4000000051+	4600000050+		2476061651+	6936061651+
1000000051+	6000000051+	6000000051+		6190154051+	4000000051+	3833333350+		2063384751+	6446718051+
1000000051+	7000000051+	7000000051+	3297385950+	6190154051+	4000000051+	3285714350+	1318954448+	1768615451+	6098505851+
1000000051+	8000000051+	8000000051+	1641820651+	6190154051+	4000000051+	2875000050+	5746372148+	1547538551+	5840784951+
1000000051+	9000000051+	9000000051+	3953902651+	6190154051+	4000000051+	2555555650+	1230103049+	1375589851+	5643446451+
1000000051+	1000000052+	1000000052+	7265984551+	6190154051+	4000000051+	2300000050+	2034475749+	1238030851+	5488375651+
1000000051+	1100000052+	1100000052+	1157806752+	6190154051+	4000000051+	2090909150+	2947144449+	1125482551+	5364044851+
1000000051+	1200000052+	1200000052+	1689014952+	6190154051+	4000000051+	1916666750+	3941034849+	1031692351+	5262769351+
1000000051+	1300000052+	1300000052+	2320223152+	6190154051+	4000000051+	1769230850+	4997403649+	9523313850+	5179228551+
1000000051+	1400000052+	1400000052+	3051431352+	6190154051+	4000000051+	1642857150+	6102862549+	8843077150+	5109622051+
1000000051+	1500000052+	1500000052+	3882639552+	6190154051+	4000000051+	1533333350+	7247594049+	8253538750+	5051163151+
1000000051+	1600000052+	1600000052+	4813847752+	6190154051+	4000000051+	1437500050+	8424233849+	7737692550+	5001761651+
1000000051+	1700000052+	1700000052+	5845056052+	6190154051+	4000000051+	1352941250+	9627151249+	7282534150+	4959819051+
1000000051+	1800000052+	1800000052+	6976264052+	6190154051+	4000000051+	1277777850+	1085196650+	6877948950+	4924092451+
1000000051+	1900000052+	1900000052+	8207472552+	6190154051+	4000000051+	1210526350+	1209522350+	6515951650+	4893600051+
1000000051+	2000000052+	2000000052+	9538680552+	6190154051+	4000000051+	1150000050+	1335415350+	6190154050+	4867556951+
1000000051+	2100000052+	2100000052+	1096988953+	6190154051+	4000000051+	1095238150+	1462651950+	5895384850+	4845327551+
1000000051+	2200000052+	2200000052+	1250109753+	6190154051+	4000000051+	1045454550+	1591048750+	5627412750+	4826391751+
1000000051+	2300000052+	2300000052+	1413230553+	6190154051+	4000000051+	1000000050+	1720454550+	5382742650+	4810319851+
1000000051+	2400000052+	2400000052+	1586351453+	6190154051+	4000000051+	9583333349+	1850743350+	5158461750+	4796753851+
1000000051+	2500000052+	2500000052+	1769472253+	6190154051+	4000000051+	9200000049+	1981808950+	4952123250+	4785393251+
1000000051+	2600000052+	2600000052+	1962593053+	6190154051+	4000000051+	8846153849+	2113561750+	4761656950+	4775983451+
1000000051+	2700000052+	2700000052+	2165713853+	6190154051+	4000000051+	8518518549+	2245925450+	4585299350+	4768307651+
1000000051+	2800000052+	2800000052+	2378834653+	6190154051+	4000000051+	8214285749+	2378834650+	4421538650+	4762180351+
1000000051+	2900000052+	2900000052+	2601955553+	6190154051+	4000000051+	7931034549+	2512232950+	4269071750+	4757440851+
1000000051+	3000000052+	3000000052+	2835076353+	6190154051+	4000000051+	7666666749+	2646071250+	4126769350+	4753950751+
1000000051+	3100000052+	3100000052+	3078197153+	6190154051+	4000000051+	7419354849+	2780307050+	3993647750+	4751589051+
1000000051+	3200000052+	3200000052+	3331317953+	6190154051+	4000000051+	7187500049+	2914903350+	3868846350+	4750249951+
1000000051+	3300000052+	3300000052+	3594438753+	6190154051+	4000000051+	6969697049+	3049827050+	3751608550+	4749840651+
1000000051+	3400000052+	3400000052+	3867559653+	6190154051+	4000000051+	6764705949+	3185049150+	3641267150+	4750278751+
2000000051+	1000000051+	1000000051+		5204088551+	4000000051+	2300000051+		1040817752+	1670817752+
2000000051+	2000000051+	2000000051+		5204088551+	4000000051+	1150000051+		5204088551+	1035408952+
2000000051+	3000000051+	3000000051+		5204088551+	4000000051+	7666666750+		3469392351+	8236059051+
2000000051+	4000000051+	4000000051+		5204088551+	4000000051+	5750000050+		2602044351+	7177044351+
2000000051+	5000000051+	5000000051+		5204088551+	4000000051+	4600000050+		2081635451+	6541635451+
2000000051+	6000000051+	6000000051+	3297385950+	5204088551+	4000000051+	3833333350+	1538780148+	1734696251+	6119568351+
2000000051+	7000000051+	7000000051+	1641820651+	5204088551+	4000000051+	3285714350+	6567282448+	1486882451+	5822021151+
2000000051+	8000000051+	8000000051+	3953902651+	5204088551+	4000000051+	2875000050+	1383865949+	1301022151+	5602360851+
2000000051+	9000000051+	9000000051+	7265984551+	5204088551+	4000000051+	2555555650+	2260528649+	1156464151+	5434625051+
2000000051+	1000000052+	1000000052+	1157806752+	5204088551+	4000000051+	2300000050+	3241858849+	1040817751+	5303236351+
2000000051+	1100000052+	1100000052+	1689014952+	5204088551+	4000000051+	2090909150+	4299310649+	9461979150+	5198281951+
2000000051+	1200000052+	1200000052+	2320223152+	5204088551+	4000000051+	1916666750+	5413853949+	8673480850+	5113153351+
2000000051+	1300000052+	1300000052+	3051431352+	5204088551+	4000000051+	1769230850+	6572313549+	8006290050+	5043271251+
2000000051+	1400000052+	1400000052+	3882639552+	5204088551+	4000000051+	1642857150+	7765279349+	7434412150+	4985379751+
2000000051+	1500000052+	1500000052+	4813847752+	5204088551+	4000000051+	1533333350+	8985849349+	6938784750+	4937070351+
2000000051+	1600000052+	1600000052+	5845056052+	5204088551+	4000000051+	1437500050+	1022884850+	6505110650+	4896549651+
2000000051+	1700000052+	1700000052+	6976264052+	5204088551+	4000000051+	1352941250+	1149031750+	6122457150+	4862443051+
2000000051+	1800000052+	1800000052+	8207472552+	5204088551+	4000000051+	1277777850+	1276717950+	5782320650+	4833681751+
2000000051+	1900000052+	1900000052+	9538680552+	5204088551+	4000000051+	1210526350+	1405700350+	5477987950+	4809421451+
2000000051+	2000000052+	2000000052+	1096988953+	5204088551+	4000000051+	1150000050+	1535784550+	5204088550+	4788987451+
2000000051+	2100000052+	2100000052+	1250109753+	5204088551+	4000000051+	1095238150+	1666813050+	4956274850+	4771832651+
2000000051+	2200000052+	2200000052+	1413230553+	5204088551+	4000000051+	1045454550+	1798657050+	4730989550+	4757510251+
2000000051+	2300000052+	2300000052+	1586351453+	5204088551+	4000000051+	1000000050+	1931210450+	4525294350+	4745650451+
2000000051+	2400000052+	2400000052+	1769472253+	5204088551+	4000000051+	9583333349+	2064384350+	4336740450+	4735945751+
2000000051+	2500000052+	2500000052+	1962593053+	5204088551+	4000000051+	9200000049+	2198104250+	4163270850+	4728137551+
2000000051+	2600000052+	2600000052+	2165713853+	5204088551+	4000000051+	8846153849+	2332307250+	4003145050+	4722006751+
2000000051+	2700000052+	2700000052+	2378834653+	5204088551+	4000000051+	8518518549+	2466939650+	3854880450+	4717367251+
2000000051+	2800000052+	2800000052+	2601955553+	5204088551+	4000000051+	8214285749+	2601955550+	3717206150+	4714059151+
2000000051+	2900000052+	2900000052+	2835076353+	5204088551+	4000000051+	7931034549+	2737315050+	3589026650+	4711944551+
2000000051+	3000000052+	3000000052+	3078197153+	5204088551+	4000000051+	7666666749+	2872983950+	3469392350+	4710904351+

```
2000000051+ 3100000052+ 3100000052+ 3331317953+ 5204088551+ 4000000051+ 74193548491+ 3008932450+ 3357476550+ 4710834451+
2000000051+ 3200000052+ 3200000052+ 3594438753+ 5204088551+ 4000000051+ 71875000491+ 3145134150+ 3252555350+ 4711643951+
3000000051+ 1000000051+ 1000000051+            4250456251+ 4000000051+ 2300000051+            8500912451+ 1480091252+
3000000051+ 2000000051+ 2000000051+            4250456251+ 4000000051+ 1150000051+            4250456251+ 9400456251+
3000000051+ 3000000051+ 3000000051+            4250456251+ 4000000051+ 7666666750+            2833637551+ 7600304251+
3000000051+ 4000000051+ 4000000051+            4250456251+ 4000000051+ 5750000050+            2125228151+ 6700228151+
3000000051+ 5000000051+ 5000000051+ 3297385950+ 4250456251+ 4000000051+ 4600000050+ 1846536248+ 1700182551+ 6162029051+
3000000051+ 6000000051+ 6000000051+ 1641820651+ 4250456251+ 4000000051+ 3833333350+ 7661829548+ 1416818751+ 5807813851+
3000000051+ 7000000051+ 7000000051+ 3953902651+ 4250456251+ 4000000051+ 3285714350+ 15815610491+ 1214416151+ 5558803151+
3000000051+ 8000000051+ 8000000051+ 7265984551+ 4250456251+ 4000000051+ 2875000050+ 2543094649+ 1062614151+ 5375545051+
3000000051+ 9000000051+ 9000000051+ 1157806752+ 4250456251+ 4000000051+ 2555555650+ 36020653491+ 9445458250+ 5236122151+
3000000051+ 1000000052+ 1000000052+ 1689014952+ 4250456251+ 4000000051+ 2300000050+ 4729241749+ 8500912450+ 5127386651+
3000000051+ 1100000052+ 1100000052+ 2320223152+ 4250456251+ 4000000051+ 2090909150+ 59060225491+ 7728102250+ 5040961351+
3000000051+ 1200000052+ 1200000052+ 3051431352+ 4250456251+ 4000000051+ 1916666750+ 71200063491+ 7084093750+ 4971276251+
3000000051+ 1300000052+ 1300000052+ 3882639552+ 4250456251+ 4000000051+ 1769230850+ 8362608549+ 6539163450+ 4914465551+
3000000051+ 1400000052+ 1400000052+ 4813847752+ 4250456251+ 4000000051+ 1642857150+ 96276957491+ 6072080350+ 4867770751+
3000000051+ 1500000052+ 1500000052+ 5845056052+ 4250456251+ 4000000051+ 1533333350+ 1091077150+ 5667274950+ 4829168551+
3000000051+ 1600000052+ 1600000052+ 6976264052+ 4250456251+ 4000000051+ 1437500050+ 1220846250+ 5313070350+ 4797141651+
3000000051+ 1700000052+ 1700000052+ 8207472552+ 4250456251+ 4000000051+ 1352941250+ 1351819050+ 5000536750+ 4770529751+
3000000051+ 1800000052+ 1800000052+ 9538680552+ 4250456251+ 4000000051+ 1277777850+ 14837947501+ 4722729150+ 4748430251+
3000000051+ 1900000052+ 1900000052+ 1096988953+ 4250456251+ 4000000051+ 1210526350+ 1616615250+ 4474164450+ 4730130551+
3000000051+ 2000000052+ 2000000052+ 1250109753+ 4250456251+ 4000000051+ 1150000050+ 1750153650+ 4250456250+ 4715061051+
3000000051+ 2100000052+ 2100000052+ 1413230553+ 4250456251+ 4000000051+ 1095238150+ 1884307350+ 4048053550+ 4702759951+
3000000051+ 2200000052+ 2200000052+ 1586351453+ 4250456251+ 4000000051+ 1045454550+ 2018992750+ 3864051150+ 4692849951+
3000000051+ 2300000052+ 2300000052+ 1769472253+ 4250456251+ 4000000051+ 1000000050+ 2154140150+ 3696048950+ 4685018951+
3000000051+ 2400000052+ 2400000052+ 1962593053+ 4250456251+ 4000000051+ 9583333349+ 2289691850+ 3542046850+ 4679007251+
3000000051+ 2500000052+ 2500000052+ 2165713853+ 4250456251+ 4000000051+ 9200000049+ 2425599450+ 3400365050+ 4674596451+
3000000051+ 2600000052+ 2600000052+ 2378834653+ 4250456251+ 4000000051+ 8846153849+ 2561821950+ 3269581750+ 4671601951+
3000000051+ 2700000052+ 2700000052+ 2601955553+ 4250456251+ 4000000051+ 8518518549+ 2698324250+ 3148486150+ 4669866251+
3000000051+ 2800000052+ 2800000052+ 2835076353+ 4250456251+ 4000000051+ 8214285749+ 2835076350+ 3036040150+ 4669254551+
3000000051+ 2900000052+ 2900000052+ 3078197153+ 4250456251+ 4000000051+ 7931034549+ 2972052350+ 2931349150+ 4669650451+
4000000051+ 1000000051+ 1000000051+            3359339551+ 4000000051+ 2300000051+            6718679051+ 1301867952+
4000000051+ 2000000051+ 2000000051+            3359339551+ 4000000051+ 1150000051+            3359339551+ 8509339551+
4000000051+ 3000000051+ 3000000051+            3359339551+ 4000000051+ 7666666750+            2239559751+ 7006226451+
4000000051+ 4000000051+ 4000000051+ 3297385950+ 3359339551+ 4000000051+ 5750000050+ 2308170248+ 1679669851+ 6256978051+
4000000051+ 5000000051+ 5000000051+ 1641820651+ 3359339551+ 4000000051+ 4600000050+ 9194195448+ 1343735851+ 5812930051+
4000000051+ 6000000051+ 6000000051+ 3953902651+ 3359339551+ 4000000051+ 3833333350+ 18451545491+ 1119779851+ 5521567651+
4000000051+ 7000000051+ 7000000051+ 7265984551+ 3359339551+ 4000000051+ 3285714350+ 29063939491+ 9598112950+ 5317466651+
4000000051+ 8000000051+ 8000000051+ 1157806752+ 3359339551+ 4000000051+ 2875000050+ 40523235491+ 8398348850+ 5167858151+
4000000051+ 9000000051+ 9000000051+ 1689014952+ 3359339551+ 4000000051+ 2555555650+ 5254713049+ 74651989501+ 5054622651+
4000000051+ 1000000052+ 1000000052+ 2320223152+ 3359339551+ 4000000051+ 2300000050+ 64966247491+ 6718679050+ 4966834151+
4000000051+ 1100000052+ 1100000052+ 3051431352+ 3359339551+ 4000000051+ 2090909150+ 7767279549+ 6107890050+ 4897552751+
4000000051+ 1200000052+ 1200000052+ 3882639552+ 3359339551+ 4000000051+ 1916666750+ 90594925491+ 5598899250+ 4842151551+
4000000051+ 1300000052+ 1300000052+ 4813847752+ 3359339551+ 4000000051+ 1769230850+ 10368288501+ 5168214650+ 4797427551+
4000000051+ 1400000052+ 1400000052+ 5845056052+ 3359339551+ 4000000051+ 1642857150+ 11690112501+ 4799056450+ 4761092451+
4000000051+ 1500000052+ 1500000052+ 6976264052+ 3359339551+ 4000000051+ 1533333350+ 13022359501+ 4479119350+ 4731468851+
4000000051+ 1600000052+ 1600000052+ 8207472552+ 3359339551+ 4000000051+ 1437500050+ 14363077501+ 4199174450+ 4707298251+
4000000051+ 1700000052+ 1700000052+ 9538680552+ 3359339551+ 4000000051+ 1352941250+ 15710768501+ 3952164150+ 4687618251+
4000000051+ 1800000052+ 1800000052+ 1096988953+ 3359339551+ 4000000051+ 1277777850+ 17064272501+ 3732599450+ 4671680451+
4000000051+ 1900000052+ 1900000052+ 1250109753+ 3359339551+ 4000000051+ 1210526350+ 18422669501+ 3536146850+ 4658894051+
4000000051+ 2000000052+ 2000000052+ 1413230553+ 3359339551+ 4000000051+ 1150000050+ 19785227501+ 3359339550+ 4648786351+
4000000051+ 2100000052+ 2100000052+ 1586351453+ 3359339551+ 4000000051+ 1095238150+ 21151352501+ 3199371050+ 4640974451+
4000000051+ 2200000052+ 2200000052+ 1769472253+ 3359339551+ 4000000051+ 1045454550+ 22520555501+ 3053945050+ 4635145651+
4000000051+ 2300000052+ 2300000052+ 1962593053+ 3359339551+ 4000000051+ 1000000050+ 23892437501+ 2921164850+ 4631040951+
4000000051+ 2400000052+ 2400000052+ 2165713853+ 3359339551+ 4000000051+ 9583333349+ 25266661501+ 2799449650+ 4628444951+
4000000051+ 2500000052+ 2500000052+ 2378834653+ 3359339551+ 4000000051+ 9200000049+ 26647216501+ 2687471650+ 4627176751+
4000000051+ 2600000052+ 2600000052+ 2601955553+ 3359339551+ 4000000051+ 8846153849+ 28021059501+ 2584107350+ 4627082851+
4000000051+ 2700000052+ 2700000052+ 2835076353+ 3359339551+ 4000000051+ 8518518549+ 29400791501+ 2488399650+ 4628033151+
5000000051+ 1000000051+ 1000000051+            2562549851+ 4000000051+ 2300000051+            5125099651+ 1142510052+
5000000051+ 2000000051+ 2000000051+            2562549851+ 4000000051+ 1150000051+            2562549851+ 7712549851+
5000000051+ 3000000051+ 3000000051+ 3297385950+ 2562549851+ 4000000051+ 7666666750+ 30775603481+ 1708366551+ 6478110851+
5000000051+ 4000000051+ 4000000051+ 1641820651+ 2562549851+ 4000000051+ 5750000050+ 1149274449+ 1281274951+ 5867767651+
5000000051+ 5000000051+ 5000000051+ 3953902651+ 2562549851+ 4000000051+ 4600000050+ 2214185449+ 1025019951+ 5507161851+
5000000051+ 6000000051+ 6000000051+ 7265984551+ 2562549851+ 4000000051+ 3833333350+ 33907928491+ 8541832750+ 5271424551+
5000000051+ 7000000051+ 7000000051+ 1157806752+ 2562549851+ 4000000051+ 3285714350+ 46312269491+ 7321570950+ 5107040851+
5000000051+ 8000000051+ 8000000051+ 1689014952+ 2562549851+ 4000000051+ 2875000050+ 59115521491+ 6406374550+ 4987253051+
5000000051+ 9000000051+ 9000000051+ 2320223152+ 2562549851+ 4000000051+ 2555555650+ 72184719491+ 5694555150+ 4897195851+
5000000051+ 1000000052+ 1000000052+ 3051431352+ 2562549851+ 4000000051+ 2300000050+ 85440075491+ 5125099650+ 4827950151+
5000000051+ 1100000052+ 1100000052+ 3882639552+ 2562549851+ 4000000051+ 2090909150+ 98830827491+ 4659181550+ 4773839951+
5000000051+ 1200000052+ 1200000052+ 4813847752+ 2562549851+ 4000000051+ 1916666750+ 11232312501+ 4270916350+ 4731081451+
5000000051+ 1300000052+ 1300000052+ 5845056052+ 2562549851+ 4000000051+ 1769230850+ 12589352501+ 3942384350+ 4697055051+
5000000051+ 1400000052+ 1400000052+ 6976264052+ 2562549851+ 4000000051+ 1642857150+ 13952528501+ 3660785450+ 4669889551+
5000000051+ 1500000052+ 1500000052+ 8207472552+ 2562549851+ 4000000051+ 1533333350+ 15320615501+ 3416733150+ 4648212851+
5000000051+ 1600000052+ 1600000052+ 9538680552+ 2562549851+ 4000000051+ 1437500050+ 16692691501+ 3203187350+ 4630995651+
5000000051+ 1700000052+ 1700000052+ 1096988953+ 2562549851+ 4000000051+ 1352941250+ 18068052501+ 3014764550+ 4617451151+
5000000051+ 1800000052+ 1800000052+ 1250109753+ 2562549851+ 4000000051+ 1277777850+ 19446151501+ 2847277650+ 4606967151+
5000000051+ 1900000052+ 1900000052+ 1413230553+ 2562549851+ 4000000051+ 1210526350+ 20826555501+ 2697420850+ 4599060351+
5000000051+ 2000000052+ 2000000052+ 1586351453+ 2562549851+ 4000000051+ 1150000050+ 22208920501+ 2562549850+ 4593344251+
5000000051+ 2100000052+ 2100000052+ 1769472253+ 2562549851+ 4000000051+ 1095238150+ 23592963501+ 2440523650+ 4589505851+
5000000051+ 2200000052+ 2200000052+ 1962593053+ 2562549851+ 4000000051+ 1045454550+ 24978456501+ 2329590750+ 4587289251+
5000000051+ 2300000052+ 2300000052+ 2165713853+ 2562549851+ 4000000051+ 1000000050+ 26365211501+ 2228304250+ 4586482551+
5000000051+ 2400000052+ 2400000052+ 2378834653+ 2562549851+ 4000000051+ 9583333349+ 27753070501+ 2135458250+ 4586909851+
6000000051+ 1000000051+ 1000000051+            1884491051+ 4000000051+ 2300000051+            3768982051+ 1006898252+
6000000051+ 2000000051+ 2000000051+ 3297385950+ 1884491051+ 4000000051+ 1150000051+ 4616340448+ 1884491051+ 7039107351+
6000000051+ 3000000051+ 3000000051+ 1641820651+ 1884491051+ 4000000051+ 7666666750+ 15323659491+ 1256327351+ 6038317751+
6000000051+ 4000000051+ 4000000051+ 3953902651+ 1884491051+ 4000000051+ 5750000050+ 27677318491+ 9422455050+ 5544922851+
6000000051+ 5000000051+ 5000000051+ 7265984551+ 1884491051+ 4000000051+ 4600000050+ 40689514491+ 7537964050+ 5254485951+
6000000051+ 6000000051+ 6000000051+ 1157806752+ 1884491051+ 4000000051+ 3833333350+ 54030980491+ 6281636750+ 5065528051+
6000000051+ 7000000051+ 7000000051+ 1689014952+ 1884491051+ 4000000051+ 3285714350+ 67560596491+ 5384260050+ 4934558051+
6000000051+ 8000000051+ 8000000051+ 2320223152+ 1884491051+ 4000000051+ 2875000050+ 81207809491+ 4711227550+ 4839830651+
6000000051+ 9000000051+ 9000000051+ 3051431352+ 1884491051+ 4000000051+ 2555555650+ 94933417491+ 4187757850+ 4769264851+
6000000051+ 1000000052+ 1000000052+ 3882639552+ 1884491051+ 4000000051+ 2300000050+ 10871391501+ 3768982050+ 4715612151+
6000000051+ 1100000052+ 1100000052+ 4813847752+ 1884491051+ 4000000051+ 2090909150+ 12253431501+ 3426347350+ 4674259951+
6000000051+ 1200000052+ 1200000052+ 5845056052+ 1884491051+ 4000000051+ 1916666750+ 13638464501+ 3140818350+ 4642133151+
6000000051+ 1300000052+ 1300000052+ 6976264052+ 1884491051+ 4000000051+ 1769230850+ 15025799501+ 2899216950+ 4617102851+
6000000051+ 1400000052+ 1400000052+ 8207472552+ 1884491051+ 4000000051+ 1642857150+ 16414945501+ 2692130050+ 4597648251+
6000000051+ 1500000052+ 1500000052+ 9538680552+ 1884491051+ 4000000051+ 1533333350+ 17805537501+ 2512654750+ 4582654251+
6000000051+ 1600000052+ 1600000052+ 1096988953+ 1884491051+ 4000000051+ 1437500050+ 19197306501+ 2355613850+ 4571284551+
6000000051+ 1700000052+ 1700000052+ 1250109753+ 1884491051+ 4000000051+ 1352941250+ 20590042501+ 2217048250+ 4562899351+
6000000051+ 1800000052+ 1800000052+ 1413230553+ 1884491051+ 4000000051+ 1277777850+ 21983586501+ 2093878950+ 4557001651+
6000000051+ 1900000052+ 1900000052+ 1586351453+ 1884491051+ 4000000051+ 1210526350+ 23377810501+ 1983674750+ 4553198251+
6000000051+ 2000000052+ 2000000052+ 1769472253+ 1884491051+ 4000000051+ 1150000050+ 24772611501+ 1884491050+ 4551175251+
6000000051+ 2100000052+ 2100000052+ 1962593053+ 1884491051+ 4000000051+ 1095238150+ 26167907501+ 1794753350+ 4550678251+
6000000051+ 2200000052+ 2200000052+ 2165713853+ 1884491051+ 4000000051+ 1045454550+ 27563630501+ 1713173650+ 4551499251+
7000000051+ 1000000051+ 1000000051+ 3297385950+ 1336192351+ 4000000051+ 2300000051+ 92326808481+ 2672384651+ 8981617351+
7000000051+ 2000000051+ 2000000051+ 1641820651+ 1336192351+ 4000000051+ 1150000051+ 22985489491+ 1336192351+ 6509177851+
7000000051+ 3000000051+ 3000000051+ 3953902651+ 1336192351+ 4000000051+ 7666666750+ 36903090491+ 8907948750+ 5694364751+
7000000051+ 4000000051+ 4000000051+ 7265984551+ 1336192351+ 4000000051+ 5750000050+ 50861893491+ 6680961550+ 5293958151+
```

7000000051+	5000000051+	5000000051+	11578067 52+	1336192351+	4000000051+	4600000050+	6483717649+	5344769250+	5059314151+
7000000051+	6000000051+	6000000051+	1689014952+	1336192351+	4000000051+	3833333350+	7882069549+	4453974350+	4907551451+
7000000051+	7000000051+	7000000051+	2320223152+	1336192351+	4000000051+	3285714350+	9280892449+	3817692350+	4803149551+
7000000051+	8000000051+	8000000051+	3051431352+	1336192351+	4000000051+	2875000050+	1068000950+	3340480850+	4728348251+
7000000051+	9000000051+	9000000051+	3882639552+	1336192351+	4000000051+	2555555650+	1207932350+	2969316250+	4673280451+
7000000051+	1000000052+	1000000052+	48138477 52+	1336192351+	4000000051+	2300000050+	1347877450+	2672384650+	4632026251+
7000000051+	1100000052+	1100000052+	5845056052+	1336192351+	4000000051+	2090909150+	1487832550+	2429440550+	4600818351+
7000000051+	1200000052+	1200000052+	6976264052+	1336192351+	4000000051+	1916666750+	1627794950+	2226987250+	4577144951+
7000000051+	1300000052+	1300000052+	8207472552+	1336192351+	4000000051+	1769230850+	1767763350+	2055680550+	4559267551+
7000000051+	1400000052+	1400000052+	9538680552+	1336192351+	4000000051+	1642857150+	1907736150+	1908846150+	4545943951+
7000000051+	1500000052+	1500000052+	10969889 53+	1336192351+	4000000051+	1533333350+	2047712650+	1781589750+	4536263651+
7000000051+	1600000052+	1600000052+	1250109753+	1336192351+	4000000051+	1437500050+	2187692050+	1670240450+	4529543251+
7000000051+	1700000052+	1700000052+	14132305 53+	1336192351+	4000000051+	1352941250+	2327673850+	1571990950+	4525260651+
7000000051+	1800000052+	1800000052+	1586351453+	1336192351+	4000000051+	1277777850+	2467657750+	1484658150+	4523009451+
7000000051+	1900000052+	1900000052+	1769472253+	1336192351+	4000000051+	1210526350+	2607643350+	1406518250+	4522468751+
7000000051+	2000000052+	2000000052+	1962593053+	1336192351+	4000000051+	1150000050+	2747630250+	1336192350+	4523382251+
8000000051+	1000000051+	1000000051+	1312082051+	9144495150+	4000000051+	2300000051+	3673829649+	1828899051+	8165637351+
8000000051+	2000000051+	2000000051+	3624164051+	9144495150+	4000000051+	1150000051+	5073829549+	9144495050+	6115187851+
8000000051+	3000000051+	3000000051+	6936246051+	9144495150+	4000000051+	7666666750+	6473829749+	6096330050+	5441038051+
8000000051+	4000000051+	4000000051+	11248328 52+	9144495150+	4000000051+	5750000050+	7873829549+	4572247550+	5110963151+
8000000051+	5000000051+	5000000051+	1656041052+	9144495150+	4000000051+	4600000050+	9273829649+	3657798050+	4918518151+
8000000051+	6000000051+	6000000051+	2287249252+	9144495150+	4000000051+	3833333350+	1067383050+	3048165050+	4794881151+
8000000051+	7000000051+	7000000051+	3018457452+	9144495150+	4000000051+	3285714350+	1207383050+	2617712950+	4710581051+
8000000051+	8000000051+	8000000051+	3849665652+	9144495150+	4000000051+	2875000050+	1347382950+	2286123850+	4650850751+
8000000051+	9000000051+	9000000051+	4780873852+	9144495150+	4000000051+	2555555650+	1487383050+	2032110050+	4607504951+
8000000051+	1000000052+	1000000052+	5812082052+	9144495150+	4000000051+	2300000050+	1627383050+	1828899050+	4575628251+
8000000051+	1100000052+	1100000052+	6943290252+	9144495150+	4000000051+	2090909150+	1767383050+	1662635550+	4552092851+
8000000051+	1200000052+	1200000052+	8174498452+	9144495150+	4000000051+	1916666750+	1907383050+	1524082550+	4534813351+
8000000051+	1300000052+	1300000052+	9505706652+	9144495150+	4000000051+	1769230850+	2047382950+	1406845450+	4522345951+
8000000051+	1400000052+	1400000052+	1093691553+	9144495150+	4000000051+	1642857150+	2187383050+	1306356450+	4513659651+
8000000051+	1500000052+	1500000052+	1246812353+	9144495150+	4000000051+	1533333350+	2327382950+	1219266050+	4507998251+
8000000051+	1600000052+	1600000052+	1409933153+	9144495150+	4000000051+	1437500050+	2467382950+	1143061950+	4504794551+
8000000051+	1700000052+	1700000052+	1583053953+	9144495150+	4000000051+	1352941250+	2607382950+	1075822950+	4503614751+
8000000051+	1800000052+	1800000052+	1766174853+	9144495150+	4000000051+	1277777850+	2747383050+	1016055050+	4504121651+
9000000051+	1000000051+	1000000051+	2312082051+	6050717050+	4000000051+	2300000051+	6473829649+	1210143451+	7574881751+
9000000051+	2000000051+	2000000051+	5624164051+	6050717050+	4000000051+	1150000051+	7873829549+	6050717050+	5833810051+
9000000051+	3000000051+	3000000051+	9936246051+	6050717050+	4000000051+	7666666750+	9273829749+	4033811350+	5262786151+
9000000051+	4000000051+	4000000051+	1524832852+	6050717050+	4000000051+	5750000050+	1067383050+	3025358550+	4984274251+
9000000051+	5000000051+	5000000051+	2156041052+	6050717050+	4000000051+	4600000050+	1207383050+	2420286850+	4822767051+
9000000051+	6000000051+	6000000051+	2887249252+	6050717050+	4000000051+	3833333350+	1347383050+	2016905750+	4719762251+
9000000051+	7000000051+	7000000051+	3718457452+	6050717050+	4000000051+	3285714350+	1487383050+	1728776350+	4650187351+
9000000051+	8000000051+	8000000051+	4649665652+	6050717050+	4000000051+	2875000050+	1627382950+	1512679350+	4601506251+
9000000051+	9000000051+	9000000051+	5680873852+	6050717050+	4000000051+	2555555650+	1767383050+	1344603850+	4566754351+
9000000051+	1000000052+	1000000052+	6812082052+	6050717050+	4000000051+	2300000050+	1907383050+	1210143450+	4541752651+
9000000051+	1100000052+	1100000052+	8043290252+	6050717050+	4000000051+	2090909150+	2047383050+	1100130450+	4523842251+
9000000051+	1200000052+	1200000052+	9374498452+	6050717050+	4000000051+	1916666750+	2187383050+	1008452850+	4511250351+
9000000051+	1300000052+	1300000052+	1080570753+	6050717050+	4000000051+	1769230850+	2327383150+	9308795449+	4502749451+
9000000051+	1400000052+	1400000052+	1233691553+	6050717050+	4000000051+	1642857150+	2467383050+	8643881449+	4497462851+
9000000051+	1500000052+	1500000052+	1396812353+	6050717050+	4000000051+	1533333350+	2607382950+	8067622749+	4494747851+
9000000051+	1600000052+	1600000052+	1569933153+	6050717050+	4000000051+	1437500050+	2747382950+	7563396349+	4494122351+
9000000051+	1700000052+	1700000052+	1753053953+	6050717050+	4000000051+	1352941250+	2887382950+	7118490649+	4495217351+
1000000052+	1000000051+	1000000051+	3312082051+	3878972750+	4000000051+	2300000051+	9273829649+	7757945450+	7168532851+
1000000052+	2000000051+	2000000051+	7624164051+	3878972750+	4000000051+	1150000051+	1067383050+	3878972750+	5644636551+
1000000052+	3000000051+	3000000051+	1293624652+	3878972750+	4000000051+	7666666750+	1207383050+	2585981850+	5146003251+
1000000052+	4000000051+	4000000051+	1924832852+	3878972750+	4000000051+	5750000050+	1347383050+	1939486450+	4903686951+
1000000052+	5000000051+	5000000051+	2656041052+	3878972750+	4000000051+	4600000050+	1487383050+	1551589150+	4763897251+
1000000052+	6000000051+	6000000051+	3487249252+	3878972750+	4000000051+	3833333350+	1627383050+	1292990950+	4675370751+
1000000052+	7000000051+	7000000051+	4418457452+	3878972750+	4000000051+	3285714350+	1767383050+	1108277950+	4616137551+
1000000052+	8000000051+	8000000051+	5449665652+	3878972750+	4000000051+	2875000050+	1907382950+	9697431849+	4575212651+
1000000052+	9000000051+	9000000051+	6580873852+	3878972750+	4000000051+	2555555650+	2047383050+	8619939349+	4546493351+
1000000052+	1000000052+	1000000052+	7812082052+	3878972750+	4000000051+	2300000050+	2187383050+	7757945449+	4526317851+
1000000052+	1100000052+	1100000052+	9143290252+	3878972750+	4000000051+	2090909150+	2327383050+	7052677649+	4512356051+
1000000052+	1200000052+	1200000052+	1057449853+	3878972750+	4000000051+	1916666750+	2467382850+	6464954549+	4503054551+
1000000052+	1300000052+	1300000052+	1210570753+	3878972750+	4000000051+	1769230850+	2607383150+	5967650349+	4497337951+
1000000052+	1400000052+	1400000052+	1373691553+	3878972750+	4000000051+	1642857150+	2747383050+	5541389649+	4494437951+
1000000052+	1500000052+	1500000052+	1546812353+	3878972750+	4000000051+	1533333350+	2887382950+	5171963649+	4493791251+
1000000052+	1600000052+	1600000052+	1729933153+	3878972750+	4000000051+	1437500050+	3027382950+	4848715949+	4494975551+
1100000052+	1000000051+	1000000051+	4312082051+	2414781250+	4000000051+	2300000051+	1207383050+	4829562450+	6903694551+
1100000052+	2000000051+	2000000051+	9624164051+	2414781250+	4000000051+	1150000051+	1347383050+	2414781250+	5526216451+
1100000052+	3000000051+	3000000051+	1593624652+	2414781250+	4000000051+	7666666750+	1487383050+	1609854150+	5076390451+
1100000052+	4000000051+	4000000051+	2324832852+	2414781250+	4000000051+	5750000050+	1627383050+	1207390650+	4858477451+
1100000052+	5000000051+	5000000051+	3156041052+	2414781250+	4000000051+	4600000050+	1767383050+	9659124849+	4733329551+
1100000052+	6000000051+	6000000051+	4087249252+	2414781250+	4000000051+	3833333350+	1907383050+	8049270749+	4654564351+
1100000052+	7000000051+	7000000051+	5118457452+	2414781250+	4000000051+	3285714350+	2047383050+	6899374949+	4602303451+
1100000052+	8000000051+	8000000051+	6249665652+	2414781250+	4000000051+	2875000050+	2187382950+	6036953049+	4566607851+
1100000052+	9000000051+	9000000051+	7480873852+	2414781250+	4000000051+	2555555650+	2327383050+	5366180449+	4541955751+
1100000052+	1000000052+	1000000052+	8812082052+	2414781250+	4000000051+	2300000050+	2467383050+	4829562449+	4525033951+
1100000052+	1100000052+	1100000052+	1024329053+	2414781250+	4000000051+	2090909150+	2607382950+	4390511349+	4513734351+
1100000052+	1200000052+	1200000052+	1177449853+	2414781250+	4000000051+	1916666750+	2747382850+	4024635349+	4506651451+
1100000052+	1300000052+	1300000052+	1340570753+	2414781250+	4000000051+	1769230850+	2887383150+	3715048049+	4502811951+
1100000052+	1400000052+	1400000052+	1513691553+	2414781250+	4000000051+	1642857150+	3027383050+	3449687449+	4501520951+
1100000052+	1500000052+	1500000052+	1696812353+	2414781250+	4000000051+	1533333350+	3167382950+	3219708349+	4502268751+
1200000052+	1000000051+	1000000051+	5312082051+	1463193050+	4000000051+	2300000051+	1487383050+	2926386050+	6741376951+
1200000052+	2000000051+	2000000051+	1162416452+	1463193050+	4000000051+	1150000051+	1627383050+	1463193050+	5459057651+
1200000052+	3000000051+	3000000051+	1893624652+	1463193050+	4000000051+	7666666750+	1767383050+	9754620049+	5040951251+
1200000052+	4000000051+	4000000051+	2724832852+	1463193050+	4000000051+	5750000050+	1907382950+	7315965049+	4838898051+
1200000052+	5000000051+	5000000051+	3656041052+	1463193050+	4000000051+	4600000050+	2047383050+	5852770249+	4723266051+
1200000052+	6000000051+	6000000051+	4687249252+	1463193050+	4000000051+	3833333350+	2187383050+	4877310049+	4650844751+
1200000052+	7000000051+	7000000051+	5818457452+	1463193050+	4000000051+	3285714350+	2327383050+	4180551449+	4603115251+
1200000052+	8000000051+	8000000051+	7049665652+	1463193050+	4000000051+	2875000050+	2467382950+	3657982549+	4570818151+
1200000052+	9000000051+	9000000051+	8380873852+	1463193050+	4000000051+	2555555650+	2607383050+	3251540049+	4548809351+
1200000052+	1000000052+	1000000052+	9812082052+	1463193050+	4000000051+	2300000050+	2747383050+	2926386049+	4534002251+
1200000052+	1100000052+	1100000052+	1134329053+	1463193050+	4000000051+	2090909150+	2887382950+	2660350949+	4524432751+
1200000052+	1200000052+	1200000052+	1297449853+	1463193050+	4000000051+	1916666750+	3027382850+	2438655049+	4518791651+
1200000052+	1300000052+	1300000052+	1470570753+	1463193050+	4000000051+	1769230850+	3167383150+	2251066249+	4516172151+
1200000052+	1400000052+	1400000052+	1653691553+	1463193050+	4000000051+	1642857150+	3307383050+	2090275749+	4515926851+
1200000052+	1500000052+	1500000052+	1846812353+	1463193050+	4000000051+	1533333350+	3447382950+	1950924049+	4517580851+
1300000052+	1000000051+	1000000051+	6312082051+	8649363249+	4000000051+	2300000051+	1767383050+	1729872650+	6649725651+
1300000052+	2000000051+	2000000051+	1362416452+	8649363249+	4000000051+	1150000051+	1907383050+	8649363049+	5427231951+
1300000052+	3000000051+	3000000051+	2193624652+	8649363249+	4000000051+	7666666750+	2047383050+	5766242049+	5029067451+
1300000052+	4000000051+	4000000051+	3124832852+	8649363249+	4000000051+	5750000050+	2187382950+	4324681549+	4836985151+
1300000052+	5000000051+	5000000051+	4156041052+	8649363249+	4000000051+	4600000050+	2327383050+	3459745249+	4727335851+
1300000052+	6000000051+	6000000051+	5287249252+	8649363249+	4000000051+	3833333350+	2467383050+	2883121049+	4658902851+
1300000052+	7000000051+	7000000051+	6518457452+	8649363249+	4000000051+	3285714350+	2607383050+	2471246649+	4614022251+
1300000052+	8000000051+	8000000051+	7849665652+	8649363249+	4000000051+	2875000050+	2747382950+	2162340849+	4583861751+
1300000052+	9000000051+	9000000051+	9280873852+	8649363249+	4000000051+	2555555650+	2887383050+	1922080749+	4563514751+
1300000052+	1000000052+	1000000052+	1081208253+	8649363249+	4000000051+	2300000050+	3027383050+	1729872649+	4550037051+
1300000052+	1100000052+	1100000052+	1244329053+	8649363249+	4000000051+	2090909150+	3167382950+	1572611549+	4541555351+

1300000052+	1200000052+	1200000052+	1417449853+	8649363249+	4000000051+	1916666750+	3307382850+	1441560549+	4536820651+
1300000052+	1300000052+	1300000052+	1600570753+	8649363249+	4000000051+	1769230850+	3447383150+	1330671249+	4534968151+
1300000052+	1400000052+	1400000052+	1793691553+	8649363249+	4000000051+	1642857150+	3587383050+	1235623349+	4535380251+
1400000052+	1000000051+	1000000051+	7312082051+	4998968549+	4000000051+	2300000051+	2047383050+	9997937049+	6604717751+
1400000052+	2000000051+	2000000051+	1562416452+	4998968549+	4000000051+	1150000051+	2187383050+	4998968549+	5418728051+
1400000052+	3000000051+	3000000051+	2493624652+	4998968549+	4000000051+	7666666750+	2327383050+	3332645749+	5032731551+
1400000052+	4000000051+	4000000051+	3524832852+	4998968549+	4000000051+	5750000050+	2467382950+	2499484349+	4846731151+
1400000052+	5000000051+	5000000051+	4656041052+	4998968549+	4000000051+	4600000050+	2607383050+	1999587449+	4740734251+
1400000052+	6000000051+	6000000051+	5887249252+	4998968549+	4000000051+	3833333350+	2747383050+	1666322849+	4674734851+
1400000052+	7000000051+	7000000051+	7218457452+	4998968549+	4000000051+	3285714350+	2887383050+	1428276749+	4631592551+
1400000052+	8000000051+	8000000051+	8649665652+	4998968549+	4000000051+	2875000050+	3027382950+	1249742149+	4602735751+
1400000052+	9000000051+	9000000051+	1018087453+	4998968549+	4000000051+	2555555650+	3167383050+	1110881949+	4583402751+
1400000052+	1000000052+	1000000052+	1181208253+	4998968549+	4000000051+	2300000050+	3307383050+	9997937048+	4570736251+
1400000052+	1100000052+	1100000052+	1354329053+	4998968549+	4000000051+	2090909150+	3447382950+	9089033648+	4562918251+
1400000052+	1200000052+	1200000052+	1537449853+	4998968549+	4000000051+	1916666750+	3587382850+	8331614248+	4558736651+
1400000052+	1300000052+	1300000052+	1730570753+	4998968549+	4000000051+	1769230850+	3727383150+	7690720848+	4557352151+
1400000052+	1400000052+	1400000052+	1933691553+	4998968549+	4000000051+	1642857150+	3867383050+	7141383648+	4558165451+
1500000052+	1000000051+	1000000051+	8312082051+	2830673749+	4000000051+	2300000051+	2327383050+	5661347449+	6589351851+
1500000052+	2000000051+	2000000051+	1762416452+	2830673749+	4000000051+	1150000051+	2467383050+	2830673749+	5425045051+
1500000052+	3000000051+	3000000051+	2793624652+	2830673749+	4000000051+	7666666750+	2607382950+	1887115849+	5046276251+
1500000052+	4000000051+	4000000051+	3924832852+	2830673749+	4000000051+	5750000050+	2747383050+	1415336949+	4863891751+
1500000052+	5000000051+	5000000051+	5156041052+	2830673749+	4000000051+	4600000050+	2887383050+	1132269549+	4760061051+
1500000052+	6000000051+	6000000051+	6487249252+	2830673749+	4000000051+	3833333350+	3027383050+	9435579048+	4695507251+
1500000052+	7000000051+	7000000051+	7918457452+	2830673749+	4000000051+	3285714350+	3167383050+	8087639148+	4653397351+
1500000052+	8000000051+	8000000051+	9449665652+	2830673749+	4000000051+	2875000050+	3307382950+	7076684348+	4625315051+
1500000052+	9000000051+	9000000051+	1108087453+	2830673749+	4000000051+	2555555650+	3447383050+	6290386048+	4606584351+
1500000052+	1000000052+	1000000052+	1281208253+	2830673749+	4000000051+	2300000050+	3587383050+	5661347448+	4594399651+
1500000052+	1100000052+	1100000052+	1464329053+	2830673749+	4000000051+	2090909150+	3727382950+	5146679548+	4586975951+
1500000052+	1200000052+	1200000052+	1657449853+	2830673749+	4000000051+	1916666750+	3867382850+	4717789548+	4583122851+
1500000052+	1300000052+	1300000052+	1860570753+	2830673749+	4000000051+	1769230850+	4007383150+	4354882648+	4582016351+
1500000052+	1400000052+	1400000052+	2073691553+	2830673749+	4000000051+	1642857150+	4147383050+	4043819648+	4583067851+
1600000052+	1000000051+	1000000051+	9312082051+	1573434849+	4000000051+	2300000051+	2607383050+	3146869649+	6592207051+
1600000052+	2000000051+	2000000051+	1962416452+	1573434849+	4000000051+	1150000051+	2747383050+	1573434849+	5440472651+
1600000052+	3000000051+	3000000051+	3093624652+	1573434849+	4000000051+	7666666750+	2887382950+	1048956549+	5065894651+
1600000052+	4000000051+	4000000051+	4324832852+	1573434849+	4000000051+	5750000050+	3027383050+	7867174048+	4885605551+
1600000052+	5000000051+	5000000051+	5656041052+	1573434849+	4000000051+	4600000050+	3167383050+	6293739248+	4783032051+
1600000052+	6000000051+	6000000051+	7087249252+	1573434849+	4000000051+	3833333350+	3307383050+	5244782748+	4719316451+
1600000052+	7000000051+	7000000051+	8618457452+	1573434849+	4000000051+	3285714350+	3447383050+	4495528048+	4677805251+
1600000052+	8000000051+	8000000051+	1024966653+	1573434849+	4000000051+	2875000050+	3587383150+	3933587048+	4650171951+
1600000052+	9000000051+	9000000051+	1198087453+	1573434849+	4000000051+	2555555650+	3727383050+	3496521848+	4631790451+
1600000052+	1000000052+	1000000052+	1381208253+	1573434849+	4000000051+	2300000050+	3867383050+	3146869648+	4619885251+
1600000052+	1100000052+	1100000052+	1574329053+	1573434849+	4000000051+	2090909150+	4007382950+	2860790548+	4612690051+
1600000052+	1200000052+	1200000052+	1777449853+	1573434849+	4000000051+	1916666750+	4147382850+	2622391348+	4609027451+
1600000052+	1300000052+	1300000052+	1990570753+	1573434849+	4000000051+	1769230850+	4287383150+	2420668948+	4608082151+
1600000052+	1400000052+	1400000052+	2213691553+	1573434849+	4000000051+	1642857150+	4427383050+	2247764048+	4609271851+
1700000052+	1000000051+	1000000051+	1031208252+	8600399148+	4000000051+	2300000051+	2887383050+	1720079849+	6605931151+
1700000052+	2000000051+	2000000051+	2162416452+	8600399148+	4000000051+	1150000051+	3027383050+	8600399048+	5461338751+
1700000052+	3000000051+	3000000051+	3393624652+	8600399148+	4000000051+	7666666750+	3167382950+	5733599348+	5089138651+
1700000052+	4000000051+	4000000051+	4724832852+	8600399148+	4000000051+	5750000050+	3307383050+	4300199548+	4910038551+
1700000052+	5000000051+	5000000051+	6156041052+	8600399148+	4000000051+	4600000050+	3447383050+	3440159648+	4808178551+
1700000052+	6000000051+	6000000051+	7687249252+	8600399148+	4000000051+	3833333350+	3587383050+	2866799748+	4744938451+
1700000052+	7000000051+	7000000051+	9318457452+	8600399148+	4000000051+	3285714350+	3727383050+	2457256948+	4703767051+
1700000052+	8000000051+	8000000051+	1104966653+	8600399148+	4000000051+	2875000050+	3867383150+	2150099848+	4676388451+
1700000052+	9000000051+	9000000051+	1288087453+	8600399148+	4000000051+	2555555650+	4007383050+	1911199848+	4658205151+
1700000052+	1000000052+	1000000052+	1481208253+	8600399148+	4000000051+	2300000050+	4147383050+	1720079848+	4646458451+
1700000052+	1100000052+	1100000052+	1684329053+	8600399148+	4000000051+	2090909150+	4287382950+	1563708948+	4639392951+
1700000052+	1200000052+	1200000052+	1897449853+	8600399148+	4000000051+	1916666750+	4427382850+	1433399848+	4635838451+
1700000052+	1300000052+	1300000052+	2120570753+	8600399148+	4000000051+	1769230850+	4567383150+	1323138348+	4634984551+
1700000052+	1400000052+	1400000052+	2353691553+	8600399148+	4000000051+	1642857150+	4707383050+	1228628448+	4636252651+
1800000052+	1000000051+	1000000051+	1131208252+	4630044848+	4000000051+	2300000051+	3167383050+	9260089648+	6625998451+
1800000052+	2000000051+	2000000051+	2362416452+	4630044848+	4000000051+	1150000051+	3307383050+	4630044848+	5485368351+
1800000052+	3000000051+	3000000051+	3693624652+	4630044848+	4000000051+	7666666750+	3447383050+	3086696548+	5114491751+
1800000052+	4000000051+	4000000051+	5124832852+	4630044848+	4000000051+	5750000050+	3587383050+	2315022448+	4936053351+
1800000052+	5000000051+	5000000051+	6656041052+	4630044848+	4000000051+	4600000050+	3727383050+	1852017948+	4834590351+
1800000052+	6000000051+	6000000051+	8287249252+	4630044848+	4000000051+	3833333350+	3867383050+	1543348348+	4771614951+
1800000052+	7000000051+	7000000051+	1001845753+	4630044848+	4000000051+	3285714350+	4007382950+	1322869948+	4730632651+
1800000052+	8000000051+	8000000051+	1184966653+	4630044848+	4000000051+	2875000050+	4147383150+	1157511248+	4703395851+
1800000052+	9000000051+	9000000051+	1378087453+	4630044848+	4000000051+	2555555650+	4287383050+	1028898848+	4685322851+
1800000052+	1000000052+	1000000052+	1581208253+	4630044848+	4000000051+	2300000050+	4427383050+	9260089647+	4673664351+
1800000052+	1100000052+	1100000052+	1794329053+	4630044848+	4000000051+	2090909150+	4567382950+	8418263347+	4666671051+
1800000052+	1200000052+	1200000052+	2017449853+	4630044848+	4000000051+	1916666750+	4707382850+	7716741347+	4663176751+
1800000052+	1300000052+	1300000052+	2250570753+	4630044848+	4000000051+	1769230850+	4847383150+	7123145847+	4662373751+
1800000052+	1400000052+	1400000052+	2493691553+	4630044848+	4000000051+	1642857150+	4987383050+	6614349747+	4663685451+
1900000052+	1000000051+	1000000051+	1231208252+	2458450948+	4000000051+	2300000051+	3447383050+	4916901848+	6649655251+
1900000052+	2000000051+	2000000051+	2562416452+	2458450948+	4000000051+	1150000051+	3587383150+	2458450948+	5511196851+
1900000052+	3000000051+	3000000051+	3993624652+	2458450948+	4000000051+	7666666750+	3727383050+	1638967348+	5141044051+
1900000052+	4000000051+	4000000051+	5524832852+	2458450948+	4000000051+	5750000050+	3867383050+	1229225548+	4962967551+
1900000052+	5000000051+	5000000051+	7156041052+	2458450948+	4000000051+	4600000050+	4007383050+	9833803647+	4861721751+
1900000052+	6000000051+	6000000051+	8887249252+	2458450948+	4000000051+	3833333350+	4147383050+	8194836347+	4798891151+
1900000052+	7000000051+	7000000051+	1071845753+	2458450948+	4000000051+	3285714350+	4287382950+	7024145447+	4758012151+
1900000052+	8000000051+	8000000051+	1264966653+	2458450948+	4000000051+	2875000050+	4427383150+	6146127347+	4730852951+
1900000052+	9000000051+	9000000051+	1468087453+	2458450948+	4000000051+	2555555650+	4567383050+	5463224247+	4712840251+
1900000052+	1000000052+	1000000052+	1681208253+	2458450948+	4000000051+	2300000050+	4707383050+	4916901847+	4701230051+
1900000052+	1100000052+	1100000052+	1904329053+	2458450948+	4000000051+	2090909150+	4847382950+	4469910747+	4694276251+
1900000052+	1200000052+	1200000052+	2137449853+	2458450948+	4000000051+	1916666750+	4987382850+	4097418247+	4690817751+
1900000052+	1300000052+	1300000052+	2380570753+	2458450948+	4000000051+	1769230850+	5127383150+	3782232247+	4690039651+
1900000052+	1400000052+	1400000052+	2633691553+	2458450948+	4000000051+	1642857150+	5267383050+	3512072747+	4691375251+
2000000052+	1000000051+	1000000051+	1331208252+	1288804448+	4000000051+	2300000051+	3727383050+	2577608848+	6675315951+
2000000052+	2000000051+	2000000051+	2762416452+	1288804448+	4000000051+	1150000051+	3867383150+	1288804448+	5538027151+
2000000052+	3000000051+	3000000051+	4293624652+	1288804448+	4000000051+	7666666750+	4007383050+	8592029347+	5168264251+
2000000052+	4000000051+	4000000051+	5924832852+	1288804448+	4000000051+	5750000050+	4147383050+	6444022047+	4990382751+
2000000052+	5000000051+	5000000051+	7656041052+	1288804448+	4000000051+	4600000050+	4287383050+	5155217647+	4889253851+
2000000052+	6000000051+	6000000051+	9487249252+	1288804448+	4000000051+	3833333350+	4427383050+	4296014747+	4826501251+
2000000052+	7000000051+	7000000051+	1141845753+	1288804448+	4000000051+	3285714350+	4567382950+	3682298347+	4785677951+
2000000052+	8000000051+	8000000051+	1344966653+	1288804448+	4000000051+	2875000050+	4707383150+	3222011047+	4758560551+
2000000052+	9000000051+	9000000051+	1558087453+	1288804448+	4000000051+	2555555650+	4847383050+	2864009847+	4740580351+
2000000052+	1000000052+	1000000052+	1781208253+	1288804448+	4000000051+	2300000050+	4987383050+	2577608847+	4728996151+
2000000052+	1100000052+	1100000052+	2014329053+	1288804448+	4000000051+	2090909150+	5127382950+	2343280747+	4722063551+
2000000052+	1200000052+	1200000052+	2257449853+	1288804448+	4000000051+	1916666750+	5267382850+	2148007347+	4718619851+
2000000052+	1300000052+	1300000052+	2510570753+	1288804448+	4000000051+	1769230850+	5407383250+	1982776047+	4717859751+
2000000052+	1400000052+	1400000052+	2773691553+	1288804448+	4000000051+	1642857150+	5547383050+	1841149147+	4719208151+
2100000052+	1000000051+	1000000051+	1431208252+	6677775147+	4000000051+	2300000051+	4007383050+	1335555048+	6702073951+
2100000052+	2000000051+	2000000051+	2962416452+	6677775147+	4000000051+	1150000051+	4147383150+	6677775047+	5565406151+
2100000052+	3000000051+	3000000051+	4593624652+	6677775147+	4000000051+	7666666750+	4287383050+	4451850047+	5195850251+
2100000052+	4000000051+	4000000051+	6324832852+	6677775147+	4000000051+	5750000050+	4427383050+	3338887547+	5018072251+
2100000052+	5000000051+	5000000051+	8156041052+	6677775147+	4000000051+	4600000050+	4567383050+	2671110047+	4917005451+
2100000052+	6000000051+	6000000051+	1008724953+	6677775147+	4000000051+	3833333350+	4707382850+	2225925047+	4854294251+
2100000052+	7000000051+	7000000051+	1211845753+	6677775147+	4000000051+	3285714350+	4847382950+	1907935747+	4813500551+

```
2100000052+ 8000000051+ 8000000051+ 1424968653+ 6677775147+ 4000000051+ 2875000050+ 4987383150+ 1669443847+ 4786405251+
2100000052+ 9000000051+ 9000000051+ 1648087453+ 6677775147+ 4000000051+ 2555555650+ 5127383050+ 1483950047+ 4768442351+
2100000052+ 1000000052+ 1000000052+ 1881208253+ 6677775147+ 4000000051+ 2300000050+ 5267383050+ 1335555047+ 4756871951+
2100000052+ 1100000052+ 1100000052+ 2124329053+ 6677775147+ 4000000051+ 2090909150+ 5407382950+ 1214140947+ 4749950651+
2100000052+ 1200000052+ 1200000052+ 2377449853+ 6677775147+ 4000000051+ 1916666750+ 5547382850+ 1112962547+ 4746516351+
2100000052+ 1300000052+ 1300000052+ 2640570753+ 6677775147+ 4000000051+ 1769230850+ 5687383250+ 1027350047+ 4745764151+
2100000052+ 1400000052+ 1400000052+ 2913691553+ 6677775147+ 4000000051+ 1642857150+ 5827383050+ 9539678646+ 4747119451+
2200000052+ 1000000051+ 1000000051+ 1531208252+ 3422597647+ 4000000051+ 2300000051+ 4287383050+ 6845195247+ 6729422851+
2200000052+ 2000000051+ 2000000051+ 3162416452+ 3422597647+ 4000000051+ 1150000051+ 4427383150+ 3422597647+ 5593080651+
2200000052+ 3000000051+ 3000000051+ 4893624652+ 3422597647+ 4000000051+ 7666666750+ 4567383050+ 2281731747+ 5223633251+
2200000052+ 4000000051+ 4000000051+ 6724832852+ 3422597647+ 4000000051+ 5750000050+ 4707383050+ 1711298847+ 5045909451+
2200000052+ 5000000051+ 5000000051+ 8656041052+ 3422597647+ 4000000051+ 4600000050+ 4847383050+ 1369039047+ 4944875251+
2200000052+ 6000000051+ 6000000051+ 1068724953+ 3422597647+ 4000000051+ 3833333350+ 4987382850+ 1140865947+ 4882185751+
2200000052+ 7000000051+ 7000000051+ 1281845753+ 3422597647+ 4000000051+ 3285714350+ 5127382950+ 9778850346+ 4841407551+
2200000052+ 8000000051+ 8000000051+ 1504966653+ 3422597647+ 4000000051+ 2875000050+ 5267383150+ 8556494046+ 4814323951+
2200000052+ 9000000051+ 9000000051+ 1738087453+ 3422597647+ 4000000051+ 2555555650+ 5407383050+ 7605772446+ 4796370051+
2200000052+ 1000000052+ 1000000052+ 1981208253+ 3422597647+ 4000000051+ 2300000050+ 5547383050+ 6845195246+ 4784806851+
2200000052+ 1100000052+ 1100000052+ 2234329053+ 3422597647+ 4000000051+ 2090909150+ 5687382950+ 6222904746+ 4777891451+
2200000052+ 1200000052+ 1200000052+ 2497449853+ 3422597647+ 4000000051+ 1916666750+ 5827382850+ 5704329346+ 4774462051+
2200000052+ 1300000052+ 1300000052+ 2770570753+ 3422597647+ 4000000051+ 1769230850+ 5967383250+ 5265534846+ 4773714151+
2200000052+ 1400000052+ 1400000052+ 3053691553+ 3422597647+ 4000000051+ 1642857150+ 6107383050+ 4889425146+ 4775072951+
2300000052+ 1000000051+ 1000000051+ 1631208252+ 1735203247+ 4000000051+ 2300000051+ 4567383050+ 3470406447+ 6757085351+
2300000052+ 2000000051+ 2000000051+ 3362416452+ 1735203247+ 4000000051+ 1150000051+ 4707383150+ 1735203247+ 5620911851+
2300000052+ 3000000051+ 3000000051+ 5193624652+ 1735203247+ 4000000051+ 7666666750+ 4847383050+ 1156802147+ 5251520751+
2300000052+ 4000000051+ 4000000051+ 7124832852+ 1735203247+ 4000000051+ 5750000050+ 4987383050+ 8676016046+ 5073825151+
2300000052+ 5000000051+ 5000000051+ 9156041052+ 1735203247+ 4000000051+ 4600000050+ 5127383050+ 6940812846+ 4972807751+
2300000052+ 6000000051+ 6000000051+ 1128724953+ 1735203247+ 4000000051+ 3833333350+ 5267382850+ 5784010746+ 4910129451+
2300000052+ 7000000051+ 7000000051+ 1351845753+ 1735203247+ 4000000051+ 3285714350+ 5407382950+ 4957723446+ 4869359351+
2300000052+ 8000000051+ 8000000051+ 1584966653+ 1735203247+ 4000000051+ 2875000050+ 5547383150+ 4338008046+ 4842281751+
2300000052+ 9000000051+ 9000000051+ 1828087453+ 1735203247+ 4000000051+ 2555555650+ 5687383050+ 3856007146+ 4824332551+
2300000052+ 1000000052+ 1000000052+ 2081208253+ 1735203247+ 4000000051+ 2300000050+ 5827383050+ 3470406446+ 4812777051+
2300000052+ 1100000052+ 1100000052+ 2344329053+ 1735203247+ 4000000051+ 2090909150+ 5967382950+ 3154914946+ 4805860751+
2300000052+ 1200000052+ 1200000052+ 2617449853+ 1735203247+ 4000000051+ 1916666750+ 6107382850+ 2892005346+ 4802433951+
2300000052+ 1300000052+ 1300000052+ 2900570753+ 1735203247+ 4000000051+ 1769230850+ 6247383250+ 2669543446+ 4801688151+
2300000052+ 1400000052+ 1400000052+ 3193691553+ 1735203247+ 4000000051+ 1642857150+ 6387383050+ 2478861746+ 4803048851+
2400000052+ 1000000051+ 1000000051+ 1731208252+ 8705373246+ 4000000051+ 2300000051+ 4847383050+ 1741074647+ 6784912451+
2400000052+ 2000000051+ 2000000051+ 3562416452+ 8705373246+ 4000000051+ 1150000051+ 4987383150+ 8705373046+ 5648825451+
2400000052+ 3000000051+ 3000000051+ 5493624652+ 8705373246+ 4000000051+ 7666666750+ 5127383050+ 5803582046+ 5279463051+
2400000052+ 4000000051+ 4000000051+ 7524832852+ 8705373246+ 4000000051+ 5750000050+ 5267383050+ 4352686546+ 5101781851+
2400000052+ 5000000051+ 5000000051+ 9656041052+ 8705373246+ 4000000051+ 4600000050+ 5407383050+ 3482149246+ 5000773151+
2400000052+ 6000000051+ 6000000051+ 1188724953+ 8705373246+ 4000000051+ 3833333350+ 5547382850+ 2901791046+ 4938100651+
2400000052+ 7000000051+ 7000000051+ 1421845753+ 8705373246+ 4000000051+ 3285714350+ 5687382950+ 2487249446+ 4897334651+
2400000052+ 8000000051+ 8000000051+ 1664966653+ 8705373246+ 4000000051+ 2875000050+ 5827383150+ 2176343346+ 4870260151+
2400000052+ 9000000051+ 9000000051+ 1918087453+ 8705373246+ 4000000051+ 2555555650+ 5967383050+ 1934527346+ 4852313251+
2400000052+ 1000000052+ 1000000052+ 2181208253+ 8705373246+ 4000000051+ 2300000050+ 6107383050+ 1741074646+ 4840755751+
2400000052+ 1100000052+ 1100000052+ 2454329053+ 8705373246+ 4000000051+ 2090909150+ 6247382950+ 1582795146+ 4833845051+
2400000052+ 1200000052+ 1200000052+ 2737449853+ 8705373246+ 4000000051+ 1916666750+ 6387382850+ 1450895546+ 4830419551+
2400000052+ 1300000052+ 1300000052+ 3030570753+ 8705373246+ 4000000051+ 1769230850+ 6527383250+ 1339288246+ 4829674851+
2400000052+ 1400000052+ 1400000052+ 3333691553+ 8705373246+ 4000000051+ 1642857150+ 6667383050+ 1243624746+ 4831036451+
2500000052+ 1000000051+ 1000000051+ 1831208252+ 4321248046+ 4000000051+ 2300000051+ 5127383050+ 8642496046+ 6812824751+
2500000052+ 2000000051+ 2000000051+ 3762416452+ 4321248046+ 4000000051+ 1150000051+ 5267383050+ 4321248046+ 5676781551+
2500000052+ 3000000051+ 3000000051+ 5793624652+ 4321248046+ 4000000051+ 7666666750+ 5407383050+ 2880832046+ 5307433851+
2500000052+ 4000000051+ 4000000051+ 7924832852+ 4321248046+ 4000000051+ 5750000050+ 5547383050+ 2160624046+ 5129759951+
2500000052+ 5000000051+ 5000000051+ 1015604153+ 4321248046+ 4000000051+ 4600000050+ 5687383050+ 1728499246+ 5028755651+
2500000052+ 6000000051+ 6000000051+ 1248724953+ 4321248046+ 4000000051+ 3833333350+ 5827382850+ 1440416046+ 4966086051+
2500000052+ 7000000051+ 7000000051+ 1491845753+ 4321248046+ 4000000051+ 3285714350+ 5967382950+ 1234642346+ 4925322051+
2500000052+ 8000000051+ 8000000051+ 1744966653+ 4321248046+ 4000000051+ 2875000050+ 6107383150+ 1080312046+ 4898249151+
2500000052+ 9000000051+ 9000000051+ 2008087453+ 4321248046+ 4000000051+ 2555555650+ 6247383050+ 9602773345+ 4880303551+
2500000052+ 1000000052+ 1000000052+ 2281208253+ 4321248046+ 4000000051+ 2300000050+ 6387383050+ 8642496045+ 4868746951+
2500000052+ 1100000052+ 1100000052+ 2564329053+ 4321248046+ 4000000051+ 2090909150+ 6527382950+ 7856814545+ 4861837151+
2500000052+ 1200000052+ 1200000052+ 2857449853+ 4321248046+ 4000000051+ 1916666750+ 6667382850+ 7202080045+ 4858412251+
2500000052+ 1300000052+ 1300000052+ 3160570753+ 4321248046+ 4000000051+ 1769230850+ 6807383250+ 6648073845+ 4857668051+
2500000052+ 1400000052+ 1400000052+ 3473691553+ 4321248046+ 4000000051+ 1642857150+ 6947383050+ 6173211445+ 4859030251+
2600000052+ 1000000051+ 1000000051+ 1931208252+ 2125733846+ 4000000051+ 2300000051+ 5407383050+ 4251467646+ 6840780851+
2600000052+ 2000000051+ 2000000051+ 3962416452+ 2125733846+ 4000000051+ 1150000051+ 5547383050+ 2125733846+ 5704759651+
2600000052+ 3000000051+ 3000000051+ 6093624652+ 2125733846+ 4000000051+ 7666666750+ 5687383050+ 1417155946+ 5335419251+
2600000052+ 4000000051+ 4000000051+ 8324832852+ 2125733846+ 4000000051+ 5750000050+ 5827383050+ 1062866946+ 5157748951+
2600000052+ 5000000051+ 5000000051+ 1065604153+ 2125733846+ 4000000051+ 4600000050+ 5967383050+ 8502935245+ 5056746851+
2600000052+ 6000000051+ 6000000051+ 1308724953+ 2125733846+ 4000000051+ 3833333350+ 6107382850+ 7085779345+ 4994078751+
2600000052+ 7000000051+ 7000000051+ 1561845753+ 2125733846+ 4000000051+ 3285714350+ 6247382950+ 6073525145+ 4953311851+
2600000052+ 8000000051+ 8000000051+ 1824966653+ 2125733846+ 4000000051+ 2875000050+ 6387383150+ 5314334545+ 4926243651+
2600000052+ 9000000051+ 9000000051+ 2098087453+ 2125733846+ 4000000051+ 2555555650+ 6527383050+ 4723852945+ 4908298651+
2600000052+ 1000000052+ 1000000052+ 2381208253+ 2125733846+ 4000000051+ 2300000050+ 6667383050+ 4251467645+ 4896742651+
2600000052+ 1100000052+ 1100000052+ 2674329053+ 2125733846+ 4000000051+ 2090909150+ 6807382950+ 3864970545+ 4889833151+
2600000052+ 1200000052+ 1200000052+ 2977449853+ 2125733846+ 4000000051+ 1916666750+ 6947382850+ 3542889745+ 4886408551+
2600000052+ 1300000052+ 1300000052+ 3290570753+ 2125733846+ 4000000051+ 1769230850+ 7087383250+ 3270359745+ 4885664751+
2600000052+ 1400000052+ 1400000052+ 3613691553+ 2125733846+ 4000000051+ 1642857150+ 7227382950+ 3036762645+ 4887027051+
2700000052+ 1000000051+ 1000000051+ 2031208252+ 1031569846+ 4000000051+ 2300000051+ 5687383050+ 2063139646+ 6868758951+
2700000052+ 2000000051+ 2000000051+ 4162416452+ 1031569846+ 4000000051+ 1150000051+ 5827383050+ 1031569846+ 5732748651+
2700000052+ 3000000051+ 3000000051+ 6393624652+ 1031569846+ 4000000051+ 7666666750+ 5967383050+ 6877132045+ 5363411951+
2700000052+ 4000000051+ 4000000051+ 8724832852+ 1031569846+ 4000000051+ 5750000050+ 6107383050+ 5157849045+ 5185743551+
2700000052+ 5000000051+ 5000000051+ 1115604153+ 1031569846+ 4000000051+ 4600000050+ 6247383050+ 4126279245+ 5084742451+
2700000052+ 6000000051+ 6000000051+ 1368724953+ 1031569846+ 4000000051+ 3833333350+ 6387382850+ 3438566045+ 5022075051+
2700000052+ 7000000051+ 7000000051+ 1631845753+ 1031569846+ 4000000051+ 3285714350+ 6527382950+ 2947342345+ 4981312651+
2700000052+ 8000000051+ 8000000051+ 1904966653+ 1031569846+ 4000000051+ 2875000050+ 6667383150+ 2578924545+ 4954240951+
2700000052+ 9000000051+ 9000000051+ 2188087453+ 1031569846+ 4000000051+ 2555555650+ 6807383050+ 2292377345+ 4936296251+
2700000052+ 1000000052+ 1000000052+ 2481208253+ 1031569846+ 4000000051+ 2300000050+ 6947383050+ 2063139645+ 4924740451+
2700000052+ 1100000052+ 1100000052+ 2784329053+ 1031569846+ 4000000051+ 2090909150+ 7087382950+ 1875581545+ 4917831151+
2700000052+ 1200000052+ 1200000052+ 3097449853+ 1031569846+ 4000000051+ 1916666750+ 7227382850+ 1719280345+ 4914406751+
2700000052+ 1300000052+ 1300000052+ 3420570753+ 1031569846+ 4000000051+ 1769230850+ 7367383250+ 1587030545+ 4913663051+
2700000052+ 1400000052+ 1400000052+ 3753691553+ 1031569846+ 4000000051+ 1642857150+ 7507382950+ 1473671145+ 4915025551+
2800000052+ 1000000051+ 1000000051+ 2131208252+ 4964947645+ 4000000051+ 2300000051+ 5967383050+ 9929895245+ 6896748251+
2800000052+ 2000000051+ 2000000051+ 4362416452+ 4964947645+ 4000000051+ 1150000051+ 6107383050+ 4964947645+ 5760743351+
2800000052+ 3000000051+ 3000000051+ 6693624652+ 4964947645+ 4000000051+ 7666666750+ 6247383050+ 3309965145+ 5391408351+
2800000052+ 4000000051+ 4000000051+ 9124832852+ 4964947645+ 4000000051+ 5750000050+ 6387383050+ 2482473045+ 5213740851+
2800000052+ 5000000051+ 5000000051+ 1165604153+ 4964947645+ 4000000051+ 4600000050+ 6527383050+ 1985979045+ 5112740351+
2800000052+ 6000000051+ 6000000051+ 1428724953+ 4964947645+ 4000000051+ 3833333350+ 6667382850+ 1654982545+ 5050073351+
2800000052+ 7000000051+ 7000000051+ 1701845753+ 4964947645+ 4000000051+ 3285714350+ 6807382950+ 1418556545+ 5009311151+
2800000052+ 8000000051+ 8000000051+ 1984966653+ 4964947645+ 4000000051+ 2875000050+ 6947383150+ 1241236945+ 4982239551+
2800000052+ 9000000051+ 9000000051+ 2278087453+ 4964947645+ 4000000051+ 2555555650+ 7087383050+ 1103321745+ 4964295051+
2800000052+ 1000000052+ 1000000052+ 2581208253+ 4964947645+ 4000000051+ 2300000050+ 7227383150+ 9929895244+ 4952739351+
2800000052+ 1100000052+ 1100000052+ 2894329053+ 4964947645+ 4000000051+ 2090909150+ 7367382950+ 9027177544+ 4945830151+
2800000052+ 1200000052+ 1200000052+ 3217449853+ 4964947645+ 4000000051+ 1916666750+ 7507382850+ 8274912744+ 4942405851+
2800000052+ 1300000052+ 1300000052+ 3550570753+ 4964947645+ 4000000051+ 1769230850+ 7647383250+ 7638380944+ 4941662251+
2800000052+ 1400000052+ 1400000052+ 3893691553+ 4964947645+ 4000000051+ 1642857150+ 7787382950+ 7092782344+ 4943024751+
2900000052+ 1000000051+ 1000000051+ 2231208252+ 2337309545+ 4000000051+ 2300000051+ 6247383050+ 4674619045+ 6924743051+
2900000052+ 2000000051+ 2000000051+ 4562416452+ 2337309545+ 4000000051+ 1150000051+ 6387383050+ 2337309545+ 5788740651+
2900000052+ 3000000051+ 3000000051+ 6993624652+ 2337309545+ 4000000051+ 7666666750+ 6527383050+ 1558206345+ 5419406651+
```

2900000052+	4000000051+	4000000051+	9524832852+	2337309545+	4000000051+	5750000050+	6667383050+	1168654845+	5241739551+
2900000052+	5000000051+	5000000051+	1215604153+	2337309545+	4000000051+	4600000050+	6807383050+	9349238044+	5140739251+
2900000052+	6000000051+	6000000051+	1488724953+	2337309545+	4000000051+	3833333350+	6947382850+	7791031744+	5078072451+
2900000052+	7000000051+	7000000051+	1771845753+	2337309545+	4000000051+	3285714350+	7087382950+	6678027144+	5037310451+
2900000052+	8000000051+	8000000051+	2064966653+	2337309545+	4000000051+	2875000050+	7227383150+	5843273844+	5010238951+
2900000052+	9000000051+	9000000051+	2368087453+	2337309545+	4000000051+	2555555650+	7367383050+	5194021144+	4992294451+
2900000052+	1000000052+	1000000052+	2681208253+	2337309545+	4000000051+	2300000050+	7507383150+	4674619044+	4980738851+
2900000052+	1100000052+	1100000052+	3004329053+	2337309545+	4000000051+	2090909150+	7647382950+	4249653644+	4973829651+
2900000052+	1200000052+	1200000052+	3337449853+	2337309545+	4000000051+	1916666750+	7787382850+	3895515844+	4970405451+
2900000052+	1300000052+	1300000052+	3680570753+	2337309545+	4000000051+	1769230850+	7927383150+	3595860844+	4969661851+
2900000052+	1400000052+	1400000052+	4033691553+	2337309545+	4000000051+	1642857150+	8067382950+	3339013644+	4971024351+
3000000052+	1000000051+	1000000051+	2331208252+	1100941745+	4000000051+	2300000051+	6527383050+	2201883445+	6952740551+
3000000052+	2000000051+	2000000051+	4762416452+	1100941745+	4000000051+	1150000051+	6667383050+	1100941745+	5816739451+
3000000052+	3000000051+	3000000051+	7293624652+	1100941745+	4000000051+	7666666750+	6807383050+	7339611344+	5447405751+
3000000052+	4000000051+	4000000051+	9924832852+	1100941745+	4000000051+	5750000050+	6947383050+	5504708544+	5269738951+
3000000052+	5000000051+	5000000051+	1265604153+	1100941745+	4000000051+	4600000050+	7087383050+	4403766844+	5168731751+
3000000052+	6000000051+	6000000051+	1548724953+	1100941745+	4000000051+	3833333350+	7227382850+	3669805744+	5106072051+
3000000052+	7000000051+	7000000051+	1841845753+	1100941745+	4000000051+	3285714350+	7367382950+	3145547744+	5065310051+
3000000052+	8000000051+	8000000051+	2144966653+	1100941745+	4000000051+	2875000050+	7507383150+	2752354344+	5038238651+
3000000052+	9000000051+	9000000051+	2458087453+	1100941745+	4000000051+	2555555650+	7647383050+	2446537144+	5020294151+
3000000052+	1000000052+	1000000052+	2781208253+	1100941745+	4000000051+	2300000050+	7787383150+	2201883444+	5008738551+
3000000052+	1100000052+	1100000052+	3114329053+	1100941745+	4000000051+	2090909150+	7927382950+	2001712244+	5001829451+
3000000052+	1200000052+	1200000052+	3457449853+	1100941745+	4000000051+	1916666750+	8067382850+	1834902844+	4998405251+
3000000052+	1300000052+	1300000052+	3810570753+	1100941745+	4000000051+	1769230850+	8207383150+	1693756544+	4997661651+
3000000052+	1400000052+	1400000052+	4173691553+	1100941745+	4000000051+	1642857150+	8347382950+	1572773944+	4999024251+
3100000052+	1000000051+	1000000051+	2431208252+	5133421444+	4000000051+	2300000051+	6807383050+	1026684345+	6980739351+
3100000052+	2000000051+	2000000051+	4962416452+	5133421444+	4000000051+	1150000051+	6947383050+	5133421544+	5844738851+
3100000052+	3000000051+	3000000051+	7593624652+	5133421444+	4000000051+	7666666750+	7087383050+	3422281044+	5475405351+
3100000052+	4000000051+	4000000051+	1032483353+	5133421444+	4000000051+	5750000050+	7227383050+	2566710844+	5297738651+
3100000052+	5000000051+	5000000051+	1315604153+	5133421444+	4000000051+	4600000050+	7367383050+	2053368644+	5196738551+
3100000052+	6000000051+	6000000051+	1608724953+	5133421444+	4000000051+	3833333350+	7507382850+	1711140544+	5134071851+
3100000052+	7000000051+	7000000051+	1911845753+	5133421444+	4000000051+	3285714350+	7647382950+	1466691944+	5093309851+
3100000052+	8000000051+	8000000051+	2224966653+	5133421444+	4000000051+	2875000050+	7787383150+	1283355444+	5066238451+
3100000052+	9000000051+	9000000051+	2548087453+	5133421444+	4000000051+	2555555650+	7927383350+	1140760344+	5048294051+
3100000052+	1000000052+	1000000052+	2881208253+	5133421444+	4000000051+	2300000050+	8067383150+	1026684344+	5036738451+
3100000052+	1100000052+	1100000052+	3224329053+	5133421444+	4000000051+	2090909150+	8207382950+	9333493643+	5029829351+
3100000052+	1200000052+	1200000052+	3577449853+	5133421444+	4000000051+	1916666750+	8347382550+	8555702543+	5026405151+
3100000052+	1300000052+	1300000052+	3940570753+	5133421444+	4000000051+	1769230850+	8487383150+	7897571543+	5025661551+
3100000052+	1400000052+	1400000052+	4313691553+	5133421444+	4000000051+	1642857150+	8627382950+	7333459343+	5027024151+
3200000052+	1000000051+	1000000051+	2531208252+	2331207044+	4000000051+	2300000051+	7087383150+	4662414044+	7008738851+
3200000052+	2000000051+	2000000051+	5162416452+	2331207044+	4000000051+	1150000051+	7227383050+	2331207044+	5872738551+
3200000052+	3000000051+	3000000051+	7893624652+	2331207044+	4000000051+	7666666750+	7367383050+	1554138044+	5503405251+
3200000052+	4000000051+	4000000051+	1072483353+	2331207044+	4000000051+	5750000050+	7507383050+	1165603544+	5325738451+
3200000052+	5000000051+	5000000051+	1365604153+	2331207044+	4000000051+	4600000050+	7647383050+	9324828043+	5224738451+
3200000052+	6000000051+	6000000051+	1668724953+	2331207044+	4000000051+	3833333350+	7787382850+	7770690043+	5162071751+
3200000052+	7000000051+	7000000051+	1981845753+	2331207044+	4000000051+	3285714350+	7927382950+	6660591443+	5121309851+
3200000052+	8000000051+	8000000051+	2304966653+	2331207044+	4000000051+	2875000050+	8067383150+	5828017543+	5094238451+
3200000052+	9000000051+	9000000051+	2638087453+	2331207044+	4000000051+	2555555650+	8207383350+	5180460043+	5076294051+
3200000052+	1000000052+	1000000052+	2981208253+	2331207044+	4000000051+	2300000050+	8347383150+	4662414043+	5064738351+
3200000052+	1100000052+	1100000052+	3334329053+	2331207044+	4000000051+	2090909150+	8487382950+	4238558243+	5057829251+
3200000052+	1200000052+	1200000052+	3697449853+	2331207044+	4000000051+	1916666750+	8627382550+	3885345043+	5054405051+
3200000052+	1300000052+	1300000052+	4070570753+	2331207044+	4000000051+	1769230850+	8767383150+	3586472343+	5053661451+
3200000052+	1400000052+	1400000052+	4453691553+	2331207044+	4000000051+	1642857150+	8907382950+	3330295743+	5055024051+
3300000052+	1000000051+	1000000051+	2631208252+	1059480544+	4000000051+	2300000051+	7367383150+	2118961044+	7036738551+
3300000052+	2000000051+	2000000051+	5362416452+	1059480544+	4000000051+	1150000051+	7507383050+	1059480544+	5900731451+
3300000052+	3000000051+	3000000051+	8193624652+	1059480544+	4000000051+	7666666750+	7647383050+	7063203343+	5531405151+
3300000052+	4000000051+	4000000051+	1112483353+	1059480544+	4000000051+	5750000050+	7787383050+	5297402543+	5353738451+
3300000052+	5000000051+	5000000051+	1415604153+	1059480544+	4000000051+	4600000050+	7927383050+	4237922043+	5252738351+
3300000052+	6000000051+	6000000051+	1728724953+	1059480544+	4000000051+	3833333350+	8067382850+	3531601743+	5190071651+
3300000052+	7000000051+	7000000051+	2051845753+	1059480544+	4000000051+	3285714350+	8207382950+	3027087143+	5149309751+
3300000052+	8000000051+	8000000051+	2384966653+	1059480544+	4000000051+	2875000050+	8347383150+	2648701343+	5122238351+
3300000052+	9000000051+	9000000051+	2728087453+	1059480544+	4000000051+	2555555650+	8487383350+	2354401143+	5104293951+
3300000052+	1000000052+	1000000052+	3081208253+	1059480544+	4000000051+	2300000050+	8627383150+	2118961043+	5092738351+
3300000052+	1100000052+	1100000052+	3444329053+	1059480544+	4000000051+	2090909150+	8767382950+	1926328243+	5085829251+
3300000052+	1200000052+	1200000052+	3817449853+	1059480544+	4000000051+	1916666750+	8907382550+	1765800843+	5082405051+
3300000052+	1300000052+	1300000052+	4200570753+	1059480544+	4000000051+	1769230850+	9047383150+	1629970043+	5081661451+
3300000052+	1400000052+	1400000052+	4593691553+	1059480544+	4000000051+	1642857150+	9187382950+	1513543643+	5083024051+
3400000052+	1000000051+	1000000051+	2731208252+	4552923443+	4000000051+	2300000051+	7647383150+	9105846843+	7064738451+
3400000052+	2000000051+	2000000051+	5562416452+	4552923443+	4000000051+	1150000051+	7787383050+	4552923443+	5928738351+
3400000052+	3000000051+	3000000051+	8493624652+	4552923443+	4000000051+	7666666750+	7927383050+	3035282343+	5559405051+
3400000052+	4000000051+	4000000051+	1152483353+	4552923443+	4000000051+	5750000050+	8067383050+	2276461743+	5381738351+
3400000052+	5000000051+	5000000051+	1465604153+	4552923443+	4000000051+	4600000050+	8207383050+	1821169443+	5280738351+
3400000052+	6000000051+	6000000051+	1788724953+	4552923443+	4000000051+	3833333350+	8347382850+	1517641143+	5218071651+
3400000052+	7000000051+	7000000051+	2121845753+	4552923443+	4000000051+	3285714350+	8487382950+	1300835343+	5177309751+
3400000052+	8000000051+	8000000051+	2464966653+	4552923443+	4000000051+	2875000050+	8627383150+	1138230943+	5150238351+
3400000052+	9000000051+	9000000051+	2818087453+	4552923443+	4000000051+	2555555650+	8767383350+	1011760843+	5132293951+
3400000052+	1000000052+	1000000052+	3181208253+	4552923443+	4000000051+	2300000050+	8907383150+	9105846842+	5120738351+
3400000052+	1100000052+	1100000052+	3554329053+	4552923443+	4000000051+	2090909150+	9047382950+	8278042542+	5113829251+
3400000052+	1200000052+	1200000052+	3937449853+	4552923443+	4000000051+	1916666750+	9187382550+	7588205742+	5110405051+
3400000052+	1300000052+	1300000052+	4330570753+	4552923443+	4000000051+	1769230850+	9327383150+	7004497542+	5109661451+
3400000052+	1400000052+	1400000052+	4733691553+	4552923443+	4000000051+	1642857150+	9467382950+	6504176342+	5111024051+
3500000052+	1000000051+	1000000051+	2831208252+	1988960243+	4000000051+	2300000051+	7927383150+	3977920443+	7092738351+
3500000052+	2000000051+	2000000051+	5762416452+	1988960243+	4000000051+	1150000051+	8067383050+	1988960243+	5956738351+
3500000052+	3000000051+	3000000051+	8793624652+	1988960243+	4000000051+	7666666750+	8207383050+	1325973543+	5587405051+
3500000052+	4000000051+	4000000051+	1192483353+	1988960243+	4000000051+	5750000050+	8347383050+	9944801042+	5409738351+
3500000052+	5000000051+	5000000051+	1515604153+	1988960243+	4000000051+	4600000050+	8487383050+	7955840842+	5308738351+
3500000052+	6000000051+	6000000051+	1848724953+	1988960243+	4000000051+	3833333350+	8627382850+	6629867342+	5246071651+
3500000052+	7000000051+	7000000051+	2191845753+	1988960243+	4000000051+	3285714350+	8767382950+	5682743442+	5205309751+
3500000052+	8000000051+	8000000051+	2544966653+	1988960243+	4000000051+	2875000050+	8907382850+	4972400542+	5178238351+
3500000052+	9000000051+	9000000051+	2908087453+	1988960243+	4000000051+	2555555650+	9047383350+	4419911642+	5160293951+
3500000052+	1000000052+	1000000052+	3281208253+	1988960243+	4000000051+	2300000050+	9187383150+	3977920442+	5148738351+
3500000052+	1100000052+	1100000052+	3664329053+	1988960243+	4000000051+	2090909150+	9327382750+	3616291342+	5141829251+
3500000052+	1200000052+	1200000052+	4057449853+	1988960243+	4000000051+	1916666750+	9467382550+	3314933742+	5138405051+
3500000052+	1300000052+	1300000052+	4460570753+	1988960243+	4000000051+	1769230850+	9607383150+	3059938842+	5137661451+
3500000052+	1400000052+	1400000052+	4873691553+	1988960243+	4000000051+	1642857150+	9747382950+	2841371742+	5139024051+
3600000052+	1000000051+	1000000051+	2931208252+	8513043842+	4000000051+	2300000051+	8207383150+	1702608843+	7120738351+
3600000052+	2000000051+	2000000051+	5962416452+	8513043842+	4000000051+	1150000051+	8347383050+	8513044042+	5984738351+
3600000052+	3000000051+	3000000051+	9093624652+	8513043842+	4000000051+	7666666750+	8487383050+	5675362742+	5615405051+
3600000052+	4000000051+	4000000051+	1232483353+	8513043842+	4000000051+	5750000050+	8627383050+	4256522042+	5437738351+
3600000052+	5000000051+	5000000051+	1565604153+	8513043842+	4000000051+	4600000050+	8767383050+	3405217642+	5336738351+
3600000052+	6000000051+	6000000051+	1908724953+	8513043842+	4000000051+	3833333350+	8907382850+	2837681342+	5274071651+
3600000052+	7000000051+	7000000051+	2261845753+	8513043842+	4000000051+	3285714350+	9047382950+	2432298342+	5233309751+
3600000052+	8000000051+	8000000051+	2624966653+	8513043842+	4000000051+	2875000050+	9187382850+	2128261042+	5206238351+
3600000052+	9000000051+	9000000051+	2998087453+	8513043842+	4000000051+	2555555650+	9327383350+	1891787642+	5188293951+
3600000052+	1000000052+	1000000052+	3381208253+	8513043842+	4000000051+	2300000050+	9467383150+	1702608842+	5176738351+
3600000052+	1100000052+	1100000052+	3774329053+	8513043842+	4000000051+	2090909150+	9607382750+	1547826242+	5169829251+
3600000052+	1200000052+	1200000052+	4177449853+	8513043842+	4000000051+	1916666750+	9747382550+	1418840742+	5166405051+
3600000052+	1300000052+	1300000052+	4590570753+	8513043842+	4000000051+	1769230850+	9887383150+	1309699142+	5165661451+

3600000052+	1400000052+	1400000052+	5013691553+	8513043842+	4000000051+	1642857150+	1002738351+	1216149142+	5167024051+
3700000052+	1000000051+	1000000051+	3031208252+	3439517742+	4000000051+	2300000051+	8487383150+	6879035442+	7148738351+
3700000052+	2000000051+	2000000051+	6162416452+	3439517742+	4000000051+	1150000051+	8627383050+	3439517742+	6012738351+
3700000052+	3000000051+	3000000051+	9393624652+	3439517742+	4000000051+	7666666750+	8767383050+	2293011842+	5643405051+
3700000052+	4000000051+	4000000051+	1272483353+	3439517742+	4000000051+	5750000050+	8907383050+	1719758942+	5465738351+
3700000052+	5000000051+	5000000051+	1615604153+	3439517742+	4000000051+	4600000050+	9047383050+	1375807142+	5364738351+
3700000052+	6000000051+	6000000051+	1968724953+	3439517742+	4000000051+	3833333350+	9187382850+	1146505942+	5302071651+
3700000052+	7000000051+	7000000051+	2331845753+	3439517742+	4000000051+	3285714350+	9327382950+	9827193441+	5261309751+
3700000052+	8000000051+	8000000051+	2704966653+	3439517742+	4000000051+	2875000050+	9467382850+	8598794341+	5234238351+
3700000052+	9000000051+	9000000051+	3088087453+	3439517742+	4000000051+	2555555650+	9607383350+	7643372741+	5216293951+
3700000052+	1000000052+	1000000052+	3481208253+	3439517742+	4000000051+	2300000050+	9747383150+	6879035441+	5204738351+
3700000052+	1100000052+	1100000052+	3884329053+	3439517742+	4000000051+	2090909150+	9887382750+	6253668541+	5197829251+
3700000052+	1200000052+	1200000052+	4297449853+	3439517742+	4000000051+	1916666750+	10027383551+	5732529541+	5194405051+
3700000052+	1300000052+	1300000052+	4720570753+	3439517742+	4000000051+	1769230850+	10167383351+	5291565741+	5193661451+
3700000052+	1400000052+	1400000052+	5153691553+	3439517742+	4000000051+	1642857150+	10307383351+	4913596741+	5195024051+
3800000052+	1000000051+	1000000051+	3131208252+	1371507142+	4000000051+	2300000051+	8767383150+	2743014242+	7176738351+
3800000052+	2000000051+	2000000051+	6362416452+	1371507142+	4000000051+	1150000051+	8907383050+	1371507142+	6040738351+
3800000052+	3000000051+	3000000051+	9693624652+	1371507142+	4000000051+	7666666750+	9047383050+	9143380741+	5671405051+
3800000052+	4000000051+	4000000051+	1312483353+	1371507142+	4000000051+	5750000050+	9187383050+	6857535541+	5493738351+
3800000052+	5000000051+	5000000051+	1665604153+	1371507142+	4000000051+	4600000050+	9327383050+	5486028441+	5392738351+
3800000052+	6000000051+	6000000051+	2028724953+	1371507142+	4000000051+	3833333350+	9467382850+	4571690341+	5330071651+
3800000052+	7000000051+	7000000051+	2401845753+	1371507142+	4000000051+	3285714350+	9607382950+	3918591741+	5289309751+
3800000052+	8000000051+	8000000051+	2784966653+	1371507142+	4000000051+	2875000050+	9747382850+	3428767841+	5262238351+
3800000052+	9000000051+	9000000051+	3178087453+	1371507142+	4000000051+	2555555650+	9887383350+	3047793641+	5244293951+
3800000052+	1000000052+	1000000052+	3581208253+	1371507142+	4000000051+	2300000050+	10027383551+	2743014241+	5232738351+
3800000052+	1100000052+	1100000052+	3994329053+	1371507142+	4000000051+	2090909150+	10167383351+	2493649341+	5225829251+
3800000052+	1200000052+	1200000052+	4417449853+	1371507142+	4000000051+	1916666750+	10307383551+	2285845241+	5222405051+
3800000052+	1300000052+	1300000052+	4850570753+	1371507142+	4000000051+	1769230850+	10447383551+	2110010941+	5221661451+
3800000052+	1400000052+	1400000052+	5293691553+	1371507142+	4000000051+	1642857150+	10587383551+	1959295941+	5223024051+
3900000052+	1000000051+	1000000051+	3231208252+	4535023441+	4000000051+	2300000051+	9047383150+	9070046841+	7204738351+
3900000052+	2000000051+	2000000051+	6562416452+	4535023441+	4000000051+	1150000051+	9187383050+	4535023441+	6068738351+
3900000052+	3000000051+	3000000051+	9993624652+	4535023441+	4000000051+	7666666750+	9327383050+	3023348941+	5699405051+
3900000052+	4000000051+	4000000051+	1352483353+	4535023441+	4000000051+	5750000050+	9467383050+	2267511741+	5521738351+
3900000052+	5000000051+	5000000051+	1715604153+	4535023441+	4000000051+	4600000050+	9607383050+	1814009441+	5420738351+
3900000052+	6000000051+	6000000051+	2088724953+	4535023441+	4000000051+	3833333350+	9747382850+	1511674541+	5358071651+
3900000052+	7000000051+	7000000051+	2471845753+	4535023441+	4000000051+	3285714350+	9887382950+	1295721041+	5317309751+
3900000052+	8000000051+	8000000051+	2864966653+	4535023441+	4000000051+	2875000050+	10027383551+	1133755941+	5290238351+
3900000052+	9000000051+	9000000051+	3268087453+	4535023441+	4000000051+	2555555650+	10167383351+	1007783041+	5272293951+
3900000052+	1000000052+	1000000052+	3681208253+	4535023441+	4000000051+	2300000050+	10307383551+	9070046840+	5260738351+
3900000052+	1100000052+	1100000052+	4104329053+	4535023441+	4000000051+	2090909150+	10447383551+	8245497140+	5253825251+
3900000052+	1200000052+	1200000052+	4537449853+	4535023441+	4000000051+	1916666750+	10587383551+	7558372340+	5250405051+
3900000052+	1300000052+	1300000052+	4980570753+	4535023441+	4000000051+	1769230850+	10727383551+	6976959140+	5249661451+
3900000052+	1400000052+	1400000052+	5433691553+	4535023441+	4000000051+	1642857150+	10867383551+	6478604940+	5251024051+
4000000052+	1000000051+	1000000051+	3331208252+	1500007741+	4000000051+	2300000051+	9327383150+	3000015441+	7232738351+
4000000052+	2000000051+	2000000051+	6762416452+	1500007741+	4000000051+	1150000051+	9467383050+	1500007741+	6096738351+
4000000052+	3000000051+	3000000051+	1029362553+	1500007741+	4000000051+	7666666750+	9607383350+	1000005141+	5727405051+
4000000052+	4000000051+	4000000051+	1392483353+	1500007741+	4000000051+	5750000050+	9747383050+	7500038540+	5549738351+
4000000052+	5000000051+	5000000051+	1765604153+	1500007741+	4000000051+	4600000050+	9887383050+	6000030840+	5448738351+
4000000052+	6000000051+	6000000051+	2148724953+	1500007741+	4000000051+	3833333350+	10027383551+	5000025740+	5386071651+
4000000052+	7000000051+	7000000051+	2541845753+	1500007741+	4000000051+	3285714350+	10167383551+	4285736340+	5345309751+
4000000052+	8000000051+	8000000051+	2944966653+	1500007741+	4000000051+	2875000050+	10307383551+	3750019340+	5318238351+
4000000052+	9000000051+	9000000051+	3358087453+	1500007741+	4000000051+	2555555650+	10447383551+	3333350440+	5300293951+
4000000052+	1000000052+	1000000052+	3781208253+	1500007741+	4000000051+	2300000050+	10587383551+	3000015440+	5288738351+
4000000052+	1100000052+	1100000052+	4214329053+	1500007741+	4000000051+	2090909150+	10727383551+	2727286740+	5281829251+
4000000052+	1200000052+	1200000052+	4657449853+	1500007741+	4000000051+	1916666750+	10867383551+	2500012840+	5278405051+
4000000052+	1300000052+	1300000052+	5110570753+	1500007741+	4000000051+	1769230850+	11007383551+	2307704240+	5277661451+
4000000052+	1400000052+	1400000052+	5573691553+	1500007741+	4000000051+	1642857150+	11147383551+	2142868140+	5279024051+
4100000052+	1000000051+	1000000051+	3431208252+	5250027040+	4000000051+	2300000051+	9607383150+	1050005441+	7260738351+
4100000052+	2000000051+	2000000051+	6962416452+	5250027040+	4000000051+	1150000051+	9747383050+	5250027040+	6124738351+
4100000052+	3000000051+	3000000051+	1059362553+	5250027040+	4000000051+	7666666750+	9887383350+	3500018040+	5755405051+
4100000052+	4000000051+	4000000051+	1432483353+	5250027040+	4000000051+	5750000050+	10027383551+	2625013540+	5577738351+
4100000052+	5000000051+	5000000051+	1815604153+	5250027040+	4000000051+	4600000050+	10167383551+	2100010840+	5476738351+
4100000052+	6000000051+	6000000051+	2208724953+	5250027040+	4000000051+	3833333350+	10307383551+	1750009040+	5414071651+
4100000052+	7000000051+	7000000051+	2611845753+	5250027040+	4000000051+	3285714350+	10447383551+	1500007740+	5373309751+
4100000052+	8000000051+	8000000051+	3024966653+	5250027040+	4000000051+	2875000050+	10587383551+	1312506840+	5346238351+
4100000052+	9000000051+	9000000051+	3448087453+	5250027040+	4000000051+	2555555650+	10727383551+	1166672740+	5328293951+
4100000052+	1000000052+	1000000052+	3881208253+	5250027040+	4000000051+	2300000050+	10867383551+	1050005440+	5316738351+
4100000052+	1100000052+	1100000052+	4324329053+	5250027040+	4000000051+	2090909150+	11007383551+	9545503639+	5309829251+
4100000052+	1200000052+	1200000052+	4777449853+	5250027040+	4000000051+	1916666750+	11147383551+	8750045039+	5306405051+
4100000052+	1300000052+	1300000052+	5240570753+	5250027040+	4000000051+	1769230850+	11287383551+	8076946639+	5305661451+
4100000052+	1400000052+	1400000052+	5713691553+	5250027040+	4000000051+	1642857150+	11427383551+	7500038639+	5307024051+
4200000052+	1000000051+	1000000051+	3531208252+	7500038639+	4000000051+	2300000051+	9887383150+	1500007740+	7288738351+
4200000052+	2000000051+	2000000051+	7162416452+	7500038639+	4000000051+	1150000051+	10027383551+	7500038539+	6152738351+
4200000052+	3000000051+	3000000051+	1089362553+	7500038639+	4000000051+	7666666750+	10167383551+	5000025739+	5783405051+
4200000052+	4000000051+	4000000051+	1472483353+	7500038639+	4000000051+	5750000050+	10307383551+	3750019339+	5605738351+
4200000052+	5000000051+	5000000051+	1865604153+	7500038639+	4000000051+	4600000050+	10447383551+	3000015439+	5504738351+
4200000052+	6000000051+	6000000051+	2268724953+	7500038639+	4000000051+	3833333350+	10587383551+	2500012839+	5442071651+
4200000052+	7000000051+	7000000051+	2681845753+	7500038639+	4000000051+	3285714350+	10727383551+	2142868139+	5401309751+
4200000052+	8000000051+	8000000051+	3104966653+	7500038639+	4000000051+	2875000050+	10867383551+	1875009639+	5374231351+
4200000052+	9000000051+	9000000051+	3538087453+	7500038639+	4000000051+	2555555650+	11007383551+	1666675239+	5356293951+
4200000052+	1000000052+	1000000052+	3981208253+	7500038639+	4000000051+	2300000050+	11147383551+	1500007739+	5344738351+
4200000052+	1100000052+	1100000052+	4434329053+	7500038639+	4000000051+	2090909150+	11287383551+	1363643439+	5337829251+
4200000052+	1200000052+	1200000052+	4897449853+	7500038639+	4000000051+	1916666750+	11427383551+	1250006439+	5334405051+
4200000052+	1300000052+	1300000052+	5370570753+	7500038639+	4000000051+	1769230850+	11567383551+	1153852139+	5333661451+
4200000052+	1400000052+	1400000052+	5853691553+	7500038639+	4000000051+	1642857150+	11707383551+	1071434139+	5335024051+
4300000052+	1000000051+	1000000051+	3631208252+		4000000051+	2300000051+	10167383551+		7316738351+
4300000052+	2000000051+	2000000051+	7362416452+		4000000051+	1150000051+	10307383551+		6180738351+
4300000052+	3000000051+	3000000051+	1119362553+		4000000051+	7666666750+	10447383551+		5811405051+
4300000052+	4000000051+	4000000051+	1512483353+		4000000051+	5750000050+	10587383551+		5633738351+
4300000052+	5000000051+	5000000051+	1915604153+		4000000051+	4600000050+	10727383551+		5532738351+
4300000052+	6000000051+	6000000051+	2328724953+		4000000051+	3833333350+	10867383551+		5470071651+
4300000052+	7000000051+	7000000051+	2751845753+		4000000051+	3285714350+	11007383551+		5429309751+
4300000052+	8000000051+	8000000051+	3184966653+		4000000051+	2875000050+	11147383551+		5402238351+
4300000052+	9000000051+	9000000051+	3628087453+		4000000051+	2555555650+	11287383551+		5384293951+
4300000052+	1000000052+	1000000052+	4081208253+		4000000051+	2300000050+	11427383551+		5372738351+
4300000052+	1100000052+	1100000052+	4544329053+		4000000051+	2090909150+	11567383551+		5365829251+
4300000052+	1200000052+	1200000052+	5017449853+		4000000051+	1916666750+	11707383551+		5362405051+
4300000052+	1300000052+	1300000052+	5500570753+		4000000051+	1769230850+	11847383551+		5361661451+
4300000052+	1400000052+	1400000052+	5993691553+		4000000051+	1642857150+	11987383551+		5363024051+

OUTPUT SURFACE - SOURCE 3

PL	PQ	PF	TS	SSUBM	IC	PC	HC	SC	TC
	1000000051+	1000000051+		5999972051+	6360000051+	6000000051+		1199994452+	2435994452+
	2000000051+	2000000051+		5999972051+	5964000051+	3000000051+		5999972051+	1496397252+
	3000000051+	3000000051+		5999972051+	5702777051+	2000000051+		3999981351+	1170275852+
	4000000051+	4000000051+		5999972051+	5510682851+	1500000051+		2999986051+	1001066952+
	5000000051+	5000000051+		5999972051+	5360291051+	1200000051+		2399988851+	8960279851+
	6000000051+	6000000051+		5999972051+	5237620051+	1000000051+		1999990751+	8237610751+
	7000000051+	7000000051+	5000000050+	5999972051+	5134614251+	8571428650+	2567307148+	1714277751+	7708602151+
	8000000051+	8000000051+	2000000051+	5999972051+	5046227451+	7500000050+	8830898148+	1499993051+	7305051351+
	9000000051+	9000000051+	4500000051+	5999972051+	4969100051+	6666666750+	1739185049+	1333327151+	6986485751+
	1000000052+	1000000052+	8000000051+	5999972051+	4900887851+	6000000050+	2744497149+	1199994451+	6728327251+
	1100000052+	1100000052+	1250000052+	5999972051+	4839894451+	5454545550+	3849916049+	1090904051+	6514752251+
	1200000052+	1200000052+	1800000052+	5999972051+	4784854251+	5000000050+	5024096949+	9999953350+	6335090551+
	1300000052+	1300000052+	2450000052+	5999972051+	4734799851+	4615384650+	6246293849+	9230726250+	6181873851+
	1400000052+	1400000052+	3200000052+	5999972051+	4688975851+	4285714350+	7502361449+	8571388650+	6049709751+
	1500000052+	1500000052+	4050000052+	5999972051+	4646782051+	4000000050+	8782418049+	7999962750+	5934602551+
	1600000052+	1600000052+	5000000052+	5999972051+	4607734251+	3750000050+	1007941950+	7499965050+	5833524951+
	1700000052+	1700000052+	6050000052+	5999972051+	4571436051+	3529411850+	1138825450+	7058790650+	5744138851+
	1800000052+	1800000052+	7200000052+	5999972051+	4537559851+	3333333350+	1270516850+	6666636650+	5664608451+
	1900000052+	1900000052+	8450000052+	5999972051+	4505831451+	3157894750+	1402736550+	6315760050+	5593470651+
	2000000052+	2000000052+	9800000052+	5999972051+	4476019051+	3000000050+	1535274550+	5999972050+	5529543751+
	2100000052+	2100000052+	1125000053+	5999972051+	4447925651+	2857142950+	1667972150+	5714259050+	5471863051+
	2200000052+	2200000052+	1280000053+	5999972051+	4421382251+	2727272750+	1800708450+	5454520050+	5419632351+
	2300000052+	2300000052+	1445000053+	5999972051+	4396242451+	2608695750+	1933391050+	5217367050+	5372187851+
	2400000052+	2400000052+	1620000053+	5999972051+	4372379451+	2500000050+	2065949350+	4999976750+	5328972051+
	2500000052+	2500000052+	1805000053+	5999972051+	4349682051+	2400000050+	2198329350+	4799977650+	5289512751+
	2600000052+	2600000052+	2000000053+	5999972051+	4328052551+	2307692350+	2330489850+	4615363150+	5253407051+
	2700000052+	2700000052+	2205000053+	5999972051+	4307404851+	2222222250+	2462399750+	4444423750+	5220309451+
	2800000052+	2800000052+	2420000053+	5999972051+	4287662251+	2142857150+	2594035850+	4285694350+	5189920951+
	2900000052+	2900000052+	2645000053+	5999972051+	4268756451+	2068965550+	2725380250+	4137911750+	5161987251+
	3000000052+	3000000052+	2880000053+	5999972051+	4250626351+	2000000050+	2856420950+	3999981350+	5136266551+
	3100000052+	3100000052+	3125000053+	5999972051+	4233217251+	1935483950+	2987149350+	3870949750+	5112575551+
	3200000052+	3200000052+	3380000053+	5999972051+	4216479651+	1875000050+	3117559650+	3749982550+	5090733951+
	3300000052+	3300000052+	3645000053+	5999972051+	4200368751+	1818181850+	3247648850+	3636346750+	5070586551+
	3400000052+	3400000052+	3920000053+	5999972051+	4184844251+	1764705950+	3377415350+	3529395350+	5051995851+
	3500000052+	3500000052+	4205000053+	5999972051+	4169869051+	1714285750+	3506859750+	3428555450+	5034839151+
	3600000052+	3600000052+	4500000053+	5999972051+	4155409751+	1666666750+	3635983650+	3333317850+	5019006651+
	3700000052+	3700000052+	4805000053+	5999972051+	4141435451+	1621621650+	3764788650+	3243228150+	5004399351+
	3800000052+	3800000052+	5120000053+	5999972051+	4127918051+	1578947450+	3893278450+	3157880050+	4990928551+
	3900000052+	3900000052+	5445000053+	5999972051+	4114831651+	1538461550+	4021456750+	3076908750+	4978514451+
	4000000052+	4000000052+	5780000053+	5999972051+	4102152551+	1500000050+	4149327350+	2999986050+	4967083851+
	4100000052+	4100000052+	6125000053+	5999972051+	4089858651+	1463414650+	4276894950+	2926815650+	4956571251+
	4200000052+	4200000052+	6480000053+	5999972051+	4077929851+	1428571450+	4404164350+	2857129550+	4946916351+
	4300000052+	4300000052+	6845000053+	5999972051+	4066347151+	1395348850+	4531140050+	2790684750+	4938064551+
	4400000052+	4400000052+	7220000053+	5999972051+	4055093151+	1363636450+	4657827350+	2727260050+	4929965451+
	4500000052+	4500000052+	7605000053+	5999972051+	4044151851+	1333333350+	4784231650+	2666654250+	4922573751+
	4600000052+	4600000052+	8000000053+	5999972051+	4033507951+	1304347850+	4910357450+	2608683550+	4915846851+
	4700000052+	4700000052+	8405000053+	5999972051+	4023147551+	1276595750+	5036210450+	2553179650+	4909746151+
	4800000052+	4800000052+	8820000053+	5999972051+	4013057451+	1250000050+	5161795050+	2499988350+	4904235751+
	4900000052+	4900000052+	9245000053+	5999972051+	4003225451+	1224489850+	5287116950+	2448968250+	4899282951+
	5000000052+	5000000052+	9680000053+	5999972051+	3993640051+	1200000050+	5412181050+	2399988850+	4894857051+
	5100000052+	5100000052+	10125000054+	5999972051+	3984290551+	1176470650+	5536992050+	2352930250+	4890929851+
	5200000052+	5200000052+	10580000054+	5999972051+	3975166751+	1153846250+	5661554850+	2307681550+	4887475051+
	5300000052+	5300000052+	11045000054+	5999972051+	3966259251+	1132075550+	5785874250+	2264140450+	4884468251+
	5400000052+	5400000052+	11520000054+	5999972051+	3957559151+	1111111150+	5909955050+	2222211950+	4881886951+
	5500000052+	5500000052+	12005000054+	5999972051+	3949057951+	1090909150+	6033801550+	2181808050+	4879709851+
	5600000052+	5600000052+	12500000054+	5999972051+	3940747751+	1071428650+	6157418250+	2142847150+	4877917151+
	5700000052+	5700000052+	13005000054+	5999972051+	3932621151+	1052631650+	6280809850+	2105253350+	4876490651+
	5800000052+	5800000052+	13520000054+	5999972051+	3924671051+	1034482880+	6403980350+	2068955950+	4875412951+
	5900000052+	5900000052+	14045000054+	5999972051+	3916890751+	1016949250+	6526934150+	2033888850+	4874667951+
	6000000052+	6000000052+	14580000054+	5999972051+	3909274051+	1000000050+	6649675250+	1999990750+	4874240651+
	6100000052+	6100000052+	15125000054+	5999972051+	3901814751+	9836065649+	6772207050+	1967203950+	4874116551+
	6200000052+	6200000052+	15680000054+	5999972051+	3894507351+	9677419449+	6894534250+	1935474850+	4874282451+
1000000051+	1000000051+	1000000051+		5002451051+	6360000051+	6000000051+		1000490252+	2236490252+
1000000051+	2000000051+	2000000051+		5002451051+	5964000051+	3000000051+		5002451051+	1396645152+
1000000051+	3000000051+	3000000051+		5002451051+	5702777051+	2000000051+		3334967351+	1103774452+
1000000051+	4000000051+	4000000051+		5002451051+	5510682851+	1500000051+		2501225551+	9511908351+
1000000051+	5000000051+	5000000051+		5002451051+	5360291051+	1200000051+		2000980451+	8561271451+
1000000051+	6000000051+	6000000051+	5000000050+	5002451051+	5237620051+	1000000051+	3055278348+	1667483751+	7908150051+
1000000051+	7000000051+	7000000051+	2000000051+	5002451051+	5134614251+	8571428650+	1026922849+	1429271751+	7431298051+
1000000051+	8000000051+	8000000051+	4500000051+	5002451051+	5046227451+	7500000050+	1986952049+	1250612851+	7066709751+
1000000051+	9000000051+	9000000051+	8000000051+	5002451051+	4969100051+	6666666750+	3091884449+	1111655851+	6778341351+
1000000051+	1000000052+	1000000052+	1250000052+	5002451051+	4900887851+	6000000050+	4288276949+	1000490251+	6544260851+
1000000051+	1100000052+	1100000052+	1800000052+	5002451051+	4839894451+	5454545550+	5543879049+	9095365550+	6350324451+
1000000051+	1200000052+	1200000052+	2450000052+	5002451051+	4784854251+	5000000050+	6838354349+	8337418350+	6186979551+
1000000051+	1300000052+	1300000052+	3200000052+	5002451051+	4734799851+	4615384650+	8158423849+	7696078550+	6047530451+
1000000051+	1400000052+	1400000052+	4050000052+	5002451051+	4688975851+	4285714350+	9495175749+	7146358650+	5927134951+
1000000051+	1500000052+	1500000052+	5000000052+	5002451051+	4646782051+	4000000050+	1084249150+	6669934750+	5822200451+
1000000051+	1600000052+	1600000052+	6050000052+	5002451051+	4607734251+	3750000050+	1219609650+	6253063850+	5730001651+
1000000051+	1700000052+	1700000052+	7200000052+	5002451051+	4571436051+	3529411850+	1355296350+	5885236550+	5648430551+
1000000051+	1800000052+	1800000052+	8450000052+	5002451051+	4537559851+	3333333350+	1491092650+	5558278950+	5575830351+
1000000051+	1900000052+	1900000052+	9800000052+	5002451051+	4505831451+	3157894750+	1626842350+	5265737950+	5510878951+
1000000051+	2000000052+	2000000052+	1125000053+	5002451051+	4476019051+	3000000050+	1762432550+	5002451050+	5452507451+
1000000051+	2100000052+	2100000052+	1280000053+	5002451051+	4447925651+	2857142950+	1897781650+	4764239050+	5399842051+
1000000051+	2200000052+	2200000052+	1445000053+	5002451051+	4421382251+	2727272750+	2032831050+	4547682750+	5352160951+
1000000051+	2300000052+	2300000052+	1620000053+	5002451051+	4396242451+	2608695750+	2167538750+	4349957450+	5308861651+
1000000051+	2400000052+	2400000052+	1805000053+	5002451051+	4372379451+	2500000050+	2301875650+	4168709250+	5269437951+
1000000051+	2500000052+	2500000052+	2000000053+	5002451051+	4349682051+	2400000050+	2435821950+	4001960850+	5233460351+
1000000051+	2600000052+	2600000052+	2205000053+	5002451051+	4328052551+	2307692350+	2569365050+	3848039250+	5200562151+
1000000051+	2700000052+	2700000052+	2420000053+	5002451051+	4307404851+	2222222250+	2702497850+	3705519350+	5170428751+
1000000051+	2800000052+	2800000052+	2645000053+	5002451051+	4287662251+	2142857150+	2835216850+	3573179350+	5142787551+
1000000051+	2900000052+	2900000052+	2880000053+	5002451051+	4268756451+	2068965550+	2967521650+	3449966250+	5117401851+
1000000051+	3000000052+	3000000052+	3125000053+	5002451051+	4250626351+	2000000050+	3099415050+	3334967350+	5094064551+
1000000051+	3100000052+	3100000052+	3380000053+	5002451051+	4233217251+	1935483950+	3230900650+	3227387750+	5072594551+
1000000051+	3200000052+	3200000052+	3645000053+	5002451051+	4216479651+	1875000050+	3361983850+	3126531950+	5052831251+
1000000051+	3300000052+	3300000052+	3920000053+	5002451051+	4200368751+	1818181850+	3492670350+	3031788550+	5034632851+
1000000051+	3400000052+	3400000052+	4205000053+	5002451051+	4184844251+	1764705950+	3622967450+	2942618250+	5017873351+
1000000051+	3500000052+	3500000052+	4500000053+	5002451051+	4169869051+	1714285750+	3752882350+	2858543450+	5002440151+
1000000051+	3600000052+	3600000052+	4805000053+	5002451051+	4155409751+	1666666750+	3882422550+	2779139450+	4988232651+
1000000051+	3700000052+	3700000052+	5120000053+	5002451051+	4141435451+	1621621650+	4011595750+	2704027650+	4975160051+
1000000051+	3800000052+	3800000052+	5445000053+	5002451051+	4127918051+	1578947450+	4140410550+	2632868950+	4963140751+

```
1000000051+ 3900000052+ 3900000052+ 5780000053+ 5002451051+ 4114831651+ 1538461550+ 4268874150+ 2565359550+ 4952101251+
1000000051+ 4000000052+ 4000000052+ 6125000053+ 5002451051+ 4102152551+ 1500000050+ 4396994850+ 2501225550+ 4941974651+
1000000051+ 4100000052+ 4100000052+ 6480000053+ 5002451051+ 4089858651+ 1463414650+ 4524780250+ 2440220050+ 4932700151+
1000000051+ 4200000052+ 4200000052+ 6845000053+ 5002451051+ 4077929851+ 1428571450+ 4652238150+ 2382119550+ 4924222751+
1000000051+ 4300000052+ 4300000052+ 7220000053+ 5002451051+ 4066347151+ 1395348850+ 4779376350+ 2326721450+ 4916491751+
1000000051+ 4400000052+ 4400000052+ 7605000053+ 5002451051+ 4055093151+ 1363636450+ 4906201850+ 2273841450+ 4909461051+
1000000051+ 4500000052+ 4500000052+ 8000000053+ 5002451051+ 4044151851+ 1333333350+ 5032722250+ 2223311650+ 4903088551+
1000000051+ 4600000052+ 4600000052+ 8405000053+ 5002451051+ 4033507951+ 1304347850+ 5158944350+ 2174978750+ 4897335051+
1000000051+ 4700000052+ 4700000052+ 8820000053+ 5002451051+ 4023147551+ 1276595750+ 5284875150+ 2128702650+ 4892164951+
1000000051+ 4800000052+ 4800000052+ 9245000053+ 5002451051+ 4013057451+ 1250000050+ 5410521050+ 2084354650+ 4887545051+
1000000051+ 4900000052+ 4900000052+ 9680000053+ 5002451051+ 4003225451+ 1224489850+ 5535888850+ 2041816750+ 4883445051+
1000000051+ 5000000052+ 5000000052+ 10125000054+ 5002451051+ 3993640051+ 1200000050+ 5660984850+ 2000980450+ 4879836551+
1000000051+ 5100000052+ 5100000052+ 10580000054+ 5002451051+ 3984290551+ 1176470650+ 5785814750+ 1961745550+ 4876693751+
1000000051+ 5200000052+ 5200000052+ 11045000054+ 5002451051+ 3975166751+ 1153846250+ 5910384850+ 1924019650+ 4873991851+
1000000051+ 5300000052+ 5300000052+ 11520000054+ 5002451051+ 3966259251+ 1132075550+ 6034700850+ 1887717450+ 4871708651+
1000000051+ 5400000052+ 5400000052+ 12005000054+ 5002451051+ 3957559151+ 1111111150+ 6158768150+ 1852759650+ 4869823051+
1000000051+ 5500000052+ 5500000052+ 12500000054+ 5002451051+ 3949057951+ 1090909150+ 6282592250+ 1819073150+ 4868315351+
1000000051+ 5600000052+ 5600000052+ 13005000054+ 5002451051+ 3940747751+ 1071428650+ 6406178050+ 1786589650+ 4867167451+
1000000051+ 5700000052+ 5700000052+ 13520000054+ 5002451051+ 3932621151+ 1052631650+ 6529530950+ 1755246050+ 4866362051+
1000000051+ 5800000052+ 5800000052+ 14045000054+ 5002451051+ 3924671051+ 1034482850+ 6652655750+ 1724983150+ 4865883251+
1000000051+ 5900000052+ 5900000052+ 14580000054+ 5002451051+ 3916890751+ 1016949250+ 6775556950+ 1695746150+ 4865715951+
1000000051+ 6000000052+ 6000000052+ 15125000054+ 5002451051+ 3909274051+ 1000000050+ 6898239750+ 1667483750+ 4865840451+
2000000051+ 1000000051+ 1000000051+                  4019803051+ 6360000051+ 6000000051+                  8039606051+ 2039960652+
2000000051+ 2000000051+ 2000000051+                  4019803051+ 5964000051+ 3000000051+                  4019803051+ 1298380352+
2000000051+ 3000000051+ 3000000051+                  4019803051+ 5702777051+ 2000000051+                  2679868751+ 1038246452+
2000000051+ 4000000051+ 4000000051+                  4019803051+ 5510682851+ 1500000051+                  2009901551+ 9020584351+
2000000051+ 5000000051+ 5000000051+ 50000000050+ 4019803051+ 5360291051+ 1200000051+ 3752203848+ 1607921251+ 8171964451+
2000000051+ 6000000051+ 6000000051+ 2000000051+ 4019803051+ 5237620051+ 1000000051+ 1222111349+ 1339934351+ 7589775451+
2000000051+ 7000000051+ 7000000051+ 4500000051+ 4019803051+ 5134614251+ 8571428650+ 2310576449+ 1148515151+ 7163378051+
2000000051+ 8000000051+ 8000000051+ 8000000051+ 4019803051+ 5046227451+ 7500000050+ 3532359149+ 1004950851+ 6836501851+
2000000051+ 9000000051+ 9000000051+ 1250000052+ 4019803051+ 4969100051+ 6666666750+ 4831069449+ 8932895650+ 6577367051+
2000000051+ 1000000052+ 1000000052+ 1800000052+ 4019803051+ 4900887851+ 6000000050+ 6175118649+ 8039606050+ 6366599651+
2000000051+ 1100000052+ 1100000052+ 2450000052+ 4019803051+ 4839894451+ 5454545550+ 7545835249+ 7308732750+ 6191680751+
2000000051+ 1200000052+ 1200000052+ 3200000052+ 4019803051+ 4784854251+ 5000000050+ 8931727549+ 6699671750+ 6044138751+
2000000051+ 1300000052+ 1300000052+ 4050000052+ 4019803051+ 4734799851+ 4615384650+ 1032550550+ 6184312350+ 5918024651+
2000000051+ 1400000052+ 1400000052+ 5000000052+ 4019803051+ 4688975851+ 4285714350+ 1172243950+ 5742575750+ 5809029251+
2000000051+ 1500000052+ 1500000052+ 6050000052+ 4019803051+ 4646782051+ 4000000050+ 1311941550+ 5359737350+ 5713949951+
2000000051+ 1600000052+ 1600000052+ 7200000052+ 4019803051+ 4607734251+ 3750000050+ 1451436350+ 5024753850+ 5630353251+
2000000051+ 1700000052+ 1700000052+ 8450000052+ 4019803051+ 4571436051+ 3529411850+ 1590590850+ 4729180050+ 5556354351+
2000000051+ 1800000052+ 1800000052+ 9800000052+ 4019803051+ 4537559851+ 3333333350+ 1729314450+ 4466447850+ 5490469351+
2000000051+ 1900000052+ 1900000052+ 1125000053+ 4019803051+ 4505831451+ 3157894750+ 1867548550+ 4231371650+ 5431513051+
2000000051+ 2000000052+ 2000000052+ 1280000053+ 4019803051+ 4476019051+ 3000000050+ 2005256550+ 4019803050+ 5378525051+
2000000051+ 2100000052+ 2100000052+ 1445000053+ 4019803051+ 4447925651+ 2857142950+ 2142417550+ 3828383850+ 5330720151+
2000000051+ 2200000052+ 2200000052+ 1620000053+ 4019803051+ 4421382251+ 2727272750+ 2279021550+ 3654366450+ 5287448351+
2000000051+ 2300000052+ 2300000052+ 1805000053+ 4019803051+ 4396242451+ 2608695750+ 2415066250+ 3495480950+ 5248166751+
2000000051+ 2400000052+ 2400000052+ 2000000053+ 4019803051+ 4372379451+ 2500000050+ 2550554750+ 3349835850+ 5212418551+
2000000051+ 2500000052+ 2500000052+ 2205000053+ 4019803051+ 4349682051+ 2400000050+ 2685493750+ 3215842450+ 5179815651+
2000000051+ 2600000052+ 2600000052+ 2420000053+ 4019803051+ 4328052551+ 2307692350+ 2819892750+ 3092156250+ 5150026651+
2000000051+ 2700000052+ 2700000052+ 2645000053+ 4019803051+ 4307404851+ 2222222250+ 2953763050+ 2977631950+ 5122786551+
2000000051+ 2800000052+ 2800000052+ 2880000053+ 4019803051+ 4287662251+ 2142857150+ 3087116850+ 2871287950+ 5097788451+
2000000051+ 2900000052+ 2900000052+ 3125000053+ 4019803051+ 4268756451+ 2068965550+ 3219967250+ 2772277950+ 5074875551+
2000000051+ 3000000052+ 3000000052+ 3380000053+ 4019803051+ 4250626351+ 2000000050+ 3352327350+ 2679868750+ 5053845951+
2000000051+ 3100000052+ 3100000052+ 3645000053+ 4019803051+ 4233217251+ 1935483950+ 3484211050+ 2593421350+ 5034528851+
2000000051+ 3200000052+ 3200000052+ 3920000053+ 4019803051+ 4216479651+ 1875000050+ 3615631350+ 2512376950+ 5016780451+
2000000051+ 3300000052+ 3300000052+ 4205000053+ 4019803051+ 4200368751+ 1818181850+ 3746601550+ 2436244250+ 5000471551+
2000000051+ 3400000052+ 3400000052+ 4500000053+ 4019803051+ 4184844251+ 1764705950+ 3877135050+ 2364590050+ 4985487351+
2000000051+ 3500000052+ 3500000052+ 4805000053+ 4019803051+ 4169869051+ 1714285750+ 4007244350+ 2297030350+ 4971725051+
2000000051+ 3600000052+ 3600000052+ 5120000053+ 4019803051+ 4155409751+ 1666666750+ 4136941450+ 2233223950+ 4959092951+
2000000051+ 3700000052+ 3700000052+ 5445000053+ 4019803051+ 4141435451+ 1621621650+ 4266238150+ 2172866550+ 4947508151+
2000000051+ 3800000052+ 3800000052+ 5780000053+ 4019803051+ 4127918051+ 1578947450+ 4395146350+ 2115685850+ 4936895951+
2000000051+ 3900000052+ 3900000052+ 6125000053+ 4019803051+ 4114831651+ 1538461550+ 4523677250+ 2061437450+ 4927187251+
2000000051+ 4000000052+ 4000000052+ 6480000053+ 4019803051+ 4102152551+ 1500000050+ 4651841050+ 2009901550+ 4918326851+
2000000051+ 4100000052+ 4100000052+ 6845000053+ 4019803051+ 4089858651+ 1463414650+ 4779648050+ 1960879550+ 4910252951+
2000000051+ 4200000052+ 4200000052+ 7220000053+ 4019803051+ 4077929851+ 1428571450+ 4907108850+ 1914191950+ 4902917051+
2000000051+ 4300000052+ 4300000052+ 7605000053+ 4019803051+ 4066347151+ 1395348850+ 5034232350+ 1869675850+ 4896272851+
2000000051+ 4400000052+ 440Y000052+ 8000000053+ 4019803051+ 4055093151+ 1363636450+ 5161027750+ 1827183250+ 4890277851+
2000000051+ 4500000052+ 4500000052+ 8405000053+ 4019803051+ 4044151851+ 1333333350+ 5287503850+ 1786579150+ 4884893451+
2000000051+ 4600000052+ 4600000052+ 8820000053+ 4019803051+ 4033507951+ 1304347850+ 5413669150+ 1747740450+ 4880083651+
2000000051+ 4700000052+ 4700000052+ 9245000053+ 4019803051+ 4023147551+ 1276595750+ 5539531750+ 1710554550+ 4875815851+
2000000051+ 4800000052+ 4800000052+ 9680000053+ 4019803051+ 4013057451+ 1250000050+ 5665099450+ 1674917950+ 4872059151+
2000000051+ 4900000052+ 4900000052+ 10125000054+ 4019803051+ 4003225451+ 1224489850+ 5790379650+ 1640735950+ 4868786051+
2000000051+ 5000000052+ 5000000052+ 10580000054+ 4019803051+ 3993640051+ 1200000050+ 5915379650+ 1607921250+ 4865970151+
2000000051+ 5100000052+ 5100000052+ 11045000054+ 4019803051+ 3984290551+ 1176470650+ 6040106350+ 1576393350+ 4863587551+
2000000051+ 5200000052+ 5200000052+ 11520000054+ 4019803051+ 3975166751+ 1153846250+ 6164566250+ 1546078150+ 4861615751+
2000000051+ 5300000052+ 5300000052+ 12005000054+ 4019803051+ 3966259251+ 1132075550+ 6288765850+ 1516906850+ 4860034151+
2000000051+ 5400000052+ 5400000052+ 12500000054+ 4019803051+ 3957559151+ 1111111150+ 6412711550+ 1488815950+ 4858823051+
2000000051+ 5500000052+ 5500000052+ 13005000054+ 4019803051+ 3949057951+ 1090909150+ 6536408950+ 1461746550+ 4857964451+
2000000051+ 5600000052+ 5600000052+ 13520000054+ 4019803051+ 3940747751+ 1071428650+ 6659863650+ 1435643950+ 4857441451+
2000000051+ 5700000052+ 5700000052+ 14045000054+ 4019803051+ 3932621151+ 1052631650+ 6783081450+ 1410457250+ 4857238151+
2000000051+ 5800000052+ 5800000052+ 14580000054+ 4019803051+ 3924671051+ 1034482850+ 6906067650+ 1386139050+ 4857340051+
3000000051+ 1000000051+ 1000000051+                  3081773151+ 6360000051+ 6000000051+                  6163546251+ 1852354652+
3000000051+ 2000000051+ 2000000051+                  3081773151+ 5964000051+ 3000000051+                  3081773151+ 1204577352+
3000000051+ 3000000051+ 3000000051+                  3081773151+ 5702777051+ 2000000051+                  2054515451+ 9757292451+
3000000051+ 4000000051+ 4000000051+ 5000000050+ 3081773151+ 5510682851+ 1500000051+ 4821847548+ 1540886651+ 8556391251+
3000000051+ 5000000051+ 5000000051+ 2000000051+ 3081773151+ 5360291051+ 1200000051+ 1500881549+ 1232709251+ 7808009051+
3000000051+ 6000000051+ 6000000051+ 4500000051+ 3081773151+ 5237620051+ 1000000051+ 2749750549+ 1027257751+ 7292375251+
3000000051+ 7000000051+ 7000000051+ 8000000051+ 3081773151+ 5134614251+ 8571428650+ 4107691449+ 8805066050+ 6913340651+
3000000051+ 8000000051+ 8000000051+ 1250000052+ 3081773151+ 5046227451+ 7500000050+ 5519311349+ 7704432850+ 6621863851+
3000000051+ 9000000051+ 9000000051+ 1800000052+ 3081773151+ 4969100051+ 6666666750+ 6956740049+ 6848384750+ 6390172651+
3000000051+ 1000000052+ 1000000052+ 2450000052+ 3081773151+ 4900887851+ 6000000050+ 8405022549+ 6163546250+ 6201292651+
3000000051+ 1100000052+ 1100000052+ 3200000052+ 3081773151+ 4839894451+ 5454545550+ 9855784549+ 5603223850+ 6044229251+
3000000051+ 1200000052+ 1200000052+ 4050000052+ 3081773151+ 4784854251+ 5000000050+ 1130421850+ 5136288550+ 5911525351+
3000000051+ 1300000052+ 1300000052+ 5000000052+ 3081773151+ 4734799851+ 4615384650+ 1274753850+ 4741189450+ 5797932651+
3000000051+ 1400000052+ 1400000052+ 6050000052+ 3081773151+ 4688975851+ 4285714350+ 1418415250+ 4402533050+ 5699642051+
3000000051+ 1500000052+ 1500000052+ 7200000052+ 3081773151+ 4646782051+ 4000000050+ 1561318750+ 4109030850+ 5613817051+
3000000051+ 1600000052+ 1600000052+ 8450000052+ 3081773151+ 4607734251+ 3750000050+ 1703421850+ 3852216450+ 5538298051+
3000000051+ 1700000052+ 1700000052+ 9800000052+ 3081773151+ 4571436051+ 3529411850+ 1844708950+ 3625615450+ 5471409651+
3000000051+ 1800000052+ 1800000052+ 1125000053+ 3081773151+ 4537559851+ 3333333350+ 1985182450+ 3424192350+ 5411830551+
3000000051+ 1900000052+ 1900000052+ 1280000053+ 3081773151+ 4505831451+ 3157894750+ 2124855250+ 3243971750+ 5358503651+
3000000051+ 2000000052+ 2000000052+ 1445000053+ 3081773151+ 4476019051+ 3000000050+ 2263746750+ 3081773150+ 5310571051+
3000000051+ 2100000052+ 2100000052+ 1620000053+ 3081773151+ 4447925651+ 2857142950+ 2401879950+ 2935022050+ 5267330151+
3000000051+ 2200000052+ 2200000052+ 1805000053+ 3081773151+ 4421382251+ 2727272750+ 2539280250+ 2801611950+ 5228198751+
3000000051+ 2300000052+ 2300000052+ 2000000053+ 3081773151+ 4396242451+ 2608695750+ 2675973750+ 2679802750+ 5192689751+
3000000051+ 2400000052+ 2400000052+ 2205000053+ 3081773151+ 4372379451+ 2500000050+ 2811986550+ 2568144350+ 5160392551+
3000000051+ 2500000052+ 2500000052+ 2420000053+ 3081773151+ 4349682051+ 2400000050+ 2947344450+ 2465418550+ 5130958351+
3000000051+ 2600000052+ 2600000052+ 2645000053+ 3081773151+ 4328052551+ 2307692350+ 3082072850+ 2370594750+ 5104088551+
3000000051+ 2700000052+ 2700000052+ 2880000053+ 3081773151+ 4307404851+ 2222222250+ 3216195650+ 2282794950+ 5079526151+
3000000051+ 2800000052+ 2800000052+ 3125000053+ 3081773151+ 4287662251+ 2142857150+ 3349736050+ 2201266550+ 5057048251+
```

3000000051+	2900000052+	2900000052+	3380000053+	3081773151+	4268756451+	2068965550+	3482716650+	2125360850+	5036460851+
3000000051+	3000000052+	3000000052+	3645000053+	3081773151+	4250626351+	2000000050+	3615157750+	2054515450+	5017593651+
3000000051+	3100000052+	3100000052+	3920000053+	3081773151+	4233217251+	1935483950+	3747080050+	1988240750+	5000297751+
3000000051+	3200000052+	3200000052+	4205000053+	3081773151+	4216479651+	1875000050+	3878502550+	1926108250+	4984440751+
3000000051+	3300000052+	3300000052+	4500000053+	3081773151+	4200368751+	1818181850+	4009442750+	1867741350+	4969905351+
3000000051+	3400000052+	3400000052+	4805000053+	3081773151+	4184844251+	1764705950+	4139918550+	1812807750+	4956587551+
3000000051+	3500000052+	3500000052+	5120000053+	3081773151+	4169869051+	1714285750+	4269945750+	1761013250+	4944397551+
3000000051+	3600000052+	3600000052+	5445000053+	3081773151+	4155409751+	1666666750+	4399540050+	1712096250+	4933240051+
3000000051+	3700000052+	3700000052+	5780000053+	3081773151+	4141435451+	1621621650+	4528715750+	1665823350+	4923051551+
3000000051+	3800000052+	3800000052+	6125000053+	3081773151+	4127918051+	1578947450+	4657486650+	1621985850+	4913760051+
3000000051+	3900000052+	3900000052+	6480000053+	3081773151+	4114831651+	1538461550+	4785865650+	1580396550+	4905304151+
3000000051+	4000000052+	4000000052+	6845000053+	3081773151+	4102152551+	1500000050+	4913866050+	1540886650+	4897627851+
3000000051+	4100000052+	4100000052+	7220000053+	3081773151+	4089858651+	1463414650+	5041498850+	1503304050+	4890680451+
3000000051+	4200000052+	4200000052+	7605000053+	3081773151+	4077929851+	1428571450+	5168776050+	1467511050+	4884415651+
3000000051+	4300000052+	4300000052+	8000000053+	3081773151+	4066347151+	1395348850+	5295707950+	1433382850+	4878791151+
3000000051+	4400000052+	4400000052+	8405000053+	3081773151+	4055093151+	1363636450+	5422304850+	1400806050+	4873767851+
3000000051+	4500000052+	4500000052+	8820000053+	3081773151+	4044151851+	1333333350+	5548576250+	1369676950+	4869310451+
3000000051+	4600000052+	4600000052+	9245000053+	3081773151+	4033507951+	1304347850+	5674532050+	1339901350+	4865386051+
3000000051+	4700000052+	4700000052+	9680000053+	3081773151+	4023147551+	1276595750+	5800180450+	1311392850+	4861964451+
3000000051+	4800000052+	4800000052+	10125000054+	3081773151+	4013057451+	1250000050+	5925530050+	1284072150+	4859017651+
3000000051+	4900000052+	4900000052+	10580000054+	3081773151+	4003225451+	1224489850+	6050589450+	1257866650+	4856520051+
3000000051+	5000000052+	5000000052+	11045000054+	3081773151+	3993640051+	1200000050+	6175365650+	1232709250+	4854447551+
3000000051+	5100000052+	5100000052+	11520000054+	3081773151+	3984290551+	1176470650+	6299866550+	1208538550+	4852778251+
3000000051+	5200000052+	5200000052+	12005000054+	3081773151+	3975166751+	1153846250+	6424098750+	1185297350+	4851490951+
3000000051+	5300000052+	5300000052+	12500000054+	3081773151+	3966259251+	1132075550+	6548069450+	1162933250+	4850567051+
3000000051+	5400000052+	5400000052+	13005000054+	3081773151+	3957559151+	1111111150+	6671785050+	1141397450+	4849988451+
3000000051+	5500000052+	5500000052+	13520000054+	3081773151+	3949057951+	1090909150+	6795251650+	1120644850+	4849738551+
3000000051+	5600000052+	5600000052+	14045000054+	3081773151+	3940747751+	1071428650+	6918475250+	1100633350+	4849801451+
4000000051+	1000000051+	1000000051+		2232978251+	6360000051+	6000000051+		4465956451+	1682595652+
4000000051+	2000000051+	2000000051+		2232978251+	5964000051+	3000000051+		2232978251+	11196978521+
4000000051+	3000000051+	3000000051+	5000000050+	2232978251+	5702777051+	2000000051+	66532400481+	1488652151+	9198082351+
4000000051+	4000000051+	4000000051+	2000000051+	2232978251+	5510682851+	1500000051+	19287391491+	1116489151+	8146459351+
4000000051+	5000000051+	5000000051+	4500000051+	2232978251+	5360291051+	1200000051+	3376983449+	8931912850+	7487252151+
4000000051+	6000000051+	6000000051+	8000000051+	2232978251+	5237620051+	1000000051+	48884453491+	7443260750+	7030830651+
4000000051+	7000000051+	7000000051+	1250000052+	2232978251+	5134614251+	8571428650+	64182679491+	6379937750+	6693933651+
4000000051+	8000000051+	8000000051+	1800000052+	2232978251+	5046227451+	7500000050+	79478081491+	5582445550+	6433950151+
4000000051+	9000000051+	9000000051+	2450000052+	2232978251+	4969100051+	6666666750+	94688961491+	4962173850+	6226673151+
4000000051+	1000000052+	1000000052+	3200000052+	2232978251+	4900887851+	6000000050+	10977989501+	4465956450+	6057263351+
4000000051+	1100000052+	1100000052+	4050000052+	2232978251+	4839894451+	5454545550+	12473727501+	4059960450+	5916082351+
4000000051+	1200000052+	1200000052+	5000000052+	2232978251+	4784854251+	5000000050+	13955825501+	3721630350+	5796575551+
4000000051+	1300000052+	1300000052+	6050000052+	2232978251+	4734799851+	4615384650+	15424521501+	3435351150+	5694118651+
4000000051+	1400000052+	1400000052+	7200000052+	2232978251+	4688975851+	4285714350+	16880313501+	3189968950+	5605347251+
4000000051+	1500000052+	1500000052+	8450000052+	2232978251+	4646782051+	4000000050+	18323811501+	2977304350+	5527750551+
4000000051+	1600000052+	1600000052+	9800000052+	2232978251+	4607734251+	3750000050+	19755661501+	2791222850+	5459413151+
4000000051+	1700000052+	1700000052+	1125000053+	2232978251+	4571436051+	3529411850+	21176505501+	2627033250+	5398845651+
4000000051+	1800000052+	1800000052+	1280000053+	2232978251+	4537559851+	3333333350+	22586964501+	2481086950+	5344872451+
4000000051+	1900000052+	1900000052+	1445000053+	2232978251+	4505831451+	3157894750+	23987624501+	2350503450+	5296547451+
4000000051+	2000000052+	2000000052+	1620000053+	2232978251+	4476019051+	3000000050+	25379028501+	2232978250+	5253107151+
4000000051+	2100000052+	2100000052+	1805000053+	2232978251+	4447925651+	2857142950+	26761686501+	2126645950+	5213921451+
4000000051+	2200000052+	2200000052+	2000000053+	2232978251+	4421382251+	2727272750+	28136069501+	2029980250+	5178468251+
4000000051+	2300000052+	2300000052+	2205000053+	2232978251+	4396242451+	2608695750+	29502610501+	1941720250+	5146310151+
4000000051+	2400000052+	2400000052+	2420000053+	2232978251+	4372379451+	2500000050+	30861711501+	1860815250+	5117078051+
4000000051+	2500000052+	2500000052+	2645000053+	2232978251+	4349682051+	2400000050+	32213745501+	1786382650+	5090457851+
4000000051+	2600000052+	2600000052+	2880000053+	2232978251+	4328052551+	2307692350+	33559053501+	1717675550+	5066179851+
4000000051+	2700000052+	2700000052+	3125000053+	2232978251+	4307404851+	2222222250+	34897956501+	1654057950+	5044012451+
4000000051+	2800000052+	2800000052+	3380000053+	2232978251+	4287662251+	2142857150+	36230746501+	1594984450+	5023753851+
4000000051+	2900000052+	2900000052+	3645000053+	2232978251+	4268756451+	2068965550+	37557697501+	1539985050+	5005228551+
4000000051+	3000000052+	3000000052+	3920000053+	2232978251+	4250626351+	2000000050+	38879063501+	1488652150+	4988282151+
4000000051+	3100000052+	3100000052+	4205000053+	2232978251+	4233217251+	1935483950+	40195081501+	1440631150+	4972779551+
4000000051+	3200000052+	3200000052+	4500000053+	2232978251+	4216479651+	1875000050+	41505972501+	1395611450+	4958600451+
4000000051+	3300000052+	3300000052+	4805000053+	2232978251+	4200368751+	1818181850+	42811939501+	1353320150+	4945638351+
4000000051+	3400000052+	3400000052+	5120000053+	2232978251+	4184844251+	1764705950+	44113179501+	1313516650+	4933798351+
4000000051+	3500000052+	3500000052+	5445000053+	2232978251+	4169869051+	1714285750+	45409874501+	1275987550+	4922995151+
4000000051+	3600000052+	3600000052+	5780000053+	2232978251+	4155409751+	1666666750+	46702189501+	1240543450+	4913152651+
4000000051+	3700000052+	3700000052+	6125000053+	2232978251+	4141435451+	1621621650+	47990281501+	1207015250+	4904201951+
4000000051+	3800000052+	3800000052+	6480000053+	2232978251+	4127918051+	1578947450+	49274305501+	1175251750+	4896081051+
4000000051+	3900000052+	3900000052+	6845000053+	2232978251+	4114831651+	1538461550+	50554397501+	1145117050+	4888733551+
4000000051+	4000000052+	4000000052+	7220000053+	2232978251+	4102152551+	1500000050+	51830698501+	1116489150+	4882108451+
4000000051+	4100000052+	4100000052+	7605000053+	2232978251+	4089858651+	1463414650+	53103324501+	1089257750+	4876159151+
4000000051+	4200000052+	4200000052+	8000000053+	2232978251+	4077929851+	1428571450+	54373298501+	1063323050+	4870843251+
4000000051+	4300000052+	4300000052+	8405000053+	2232978251+	4066347151+	1395348850+	55638035501+	1038594550+	4866121851+
4000000051+	4400000052+	4400000052+	8820000053+	2232978251+	4055093151+	1363636450+	56900330501+	1014990150+	4861959051+
4000000051+	4500000052+	4500000052+	9245000053+	2232978251+	4044151851+	1333333350+	58159396501+	9924347649+	4858322651+
4000000051+	4600000052+	4600000052+	9680000053+	2232978251+	4033507951+	1304347850+	59415324501+	9708600949+	4855181951+
4000000051+	4700000052+	4700000052+	10125000054+	2232978251+	4023147551+	1276595750+	60668209501+	9502034949+	4852509551+
4000000051+	4800000052+	4800000052+	10580000054+	2232978251+	4013057451+	1250000050+	61918135501+	9304075849+	4850279551+
4000000051+	4900000052+	4900000052+	11045000054+	2232978251+	4003225451+	1224489850+	63165180501+	9114196749+	4848468251+
4000000051+	5000000052+	5000000052+	11520000054+	2232978251+	3993640051+	1200000050+	64409426501+	8931912849+	4847053451+
4000000051+	5100000052+	5100000052+	12005000054+	2232978251+	3984290551+	1176470650+	65650951501+	8756777349+	4846014951+
4000000051+	5200000052+	5200000052+	12500000054+	2232978251+	3975166751+	1153846250+	66889825501+	8588377749+	4845333451+
4000000051+	5300000052+	5300000052+	13005000054+	2232978251+	3966259251+	1132075550+	68126115501+	8426328249+	4844991351+
4000000051+	5400000052+	5400000052+	13520000054+	2232978251+	3957559151+	1111111150+	69359887501+	8270286949+	4844972051+
4000000051+	5500000052+	5500000052+	14045000054+	2232978251+	3949057951+	1090909150+	70591205501+	8119920749+	4845260151+
5000000051+	1000000051+	1000000051+		1518036551+	6360000051+	6000000051+		3036073051+	15396073521+
5000000051+	2000000051+	2000000051+	5000000050+	1518036551+	5964000051+	3000000051+	1043700049+	1518036551+	10492474521+
5000000051+	3000000051+	3000000051+	2000000051+	1518036551+	5702777051+	2000000051+	2661295949+	1012024351+	8741414351+
5000000051+	4000000051+	4000000051+	4500000051+	1518036551+	5510682851+	1500000051+	4339662849+	7590182550+	7813097751+
5000000051+	5000000051+	5000000051+	8000000051+	1518036551+	5360291051+	1200000051+	6003526049+	6072146050+	7227540951+
5000000051+	6000000051+	6000000051+	1250000052+	1518036551+	5237620051+	1000000051+	7638195849+	5060121750+	6820014251+
5000000051+	7000000051+	7000000051+	1800000052+	1518036551+	5134614251+	8571428650+	9242305649+	4337247150+	6517904951+
5000000051+	8000000051+	8000000051+	2450000052+	1518036551+	5046227451+	7500000050+	10817850501+	3795091350+	6283915051+
5000000051+	9000000051+	9000000051+	3200000052+	1518036551+	4969100051+	6666666750+	12367538501+	3373414450+	6096783551+
5000000051+	1000000052+	1000000052+	4050000052+	1518036551+	4900887851+	6000000050+	13894017501+	3036073050+	5943435351+
5000000051+	1100000052+	1100000052+	5000000052+	1518036551+	4839894451+	5454545550+	15399664501+	2760066450+	5815352251+
5000000051+	1200000052+	1200000052+	6050000052+	1518036551+	4784854251+	5000000050+	16886548501+	2530060850+	5706725851+
5000000051+	1300000052+	1300000052+	7200000052+	1518036551+	4734799851+	4615384650+	18356455501+	2335440850+	5613447051+
5000000051+	1400000052+	1400000052+	8450000052+	1518036551+	4688975851+	4285714350+	19810923501+	2168623650+	5532518831+
5000000051+	1500000052+	1500000052+	9800000052+	1518036551+	4646782051+	4000000050+	21251283501+	2024048750+	5461699751+
5000000051+	1600000052+	1600000052+	1125000053+	1518036551+	4607734251+	3750000050+	22678692501+	1897545650+	5399275751+
5000000051+	1700000052+	1700000052+	1280000053+	1518036551+	4571436051+	3529411850+	24094157501+	1785925350+	5343911351+
5000000051+	1800000052+	1800000052+	1445000053+	1518036551+	4537559851+	3333333350+	25498565501+	1686707250+	5294549551+
5000000051+	1900000052+	1900000052+	1620000053+	1518036551+	4505831451+	3157894750+	26892699501+	1597933250+	5250341251+
5000000051+	2000000052+	2000000052+	1805000053+	1518036551+	4476019051+	3000000050+	28277250501+	1518036550+	5210595251+
5000000051+	2100000052+	2100000052+	2000000053+	1518036551+	4447925651+	2857142950+	29652837501+	1445749050+	5174743251+
5000000051+	2200000052+	2200000052+	2205000053+	1518036551+	4421382251+	2727272750+	31020016501+	1380033250+	5142313051+
5000000051+	2300000052+	2300000052+	2420000053+	1518036551+	4396242451+	2608695750+	32379828501+	1320031750+	5112908051+
5000000051+	2400000052+	2400000052+	2645000053+	1518036551+	4372379451+	2500000050+	33731087501+	1265030450+	5086193351+
5000000051+	2500000052+	2500000052+	2880000053+	1518036551+	4349682051+	2400000050+	35075835501+	1214429250+	5061883351+

```
5000000051+ 2600000052+ 2600000052+ 3125000053+ 1518036551+ 4328052551+ 2307692350+ 3641390350+ 1167720450+ 5039732751+
5000000051+ 2700000052+ 2700000052+ 3380000053+ 1518036551+ 4307404851+ 2222222250+ 3774563050+ 1124471550+ 5019530551+
5000000051+ 2800000052+ 2800000052+ 3645000053+ 1518036551+ 4287662251+ 2142857150+ 3907132150+ 1084311850+ 5001092351+
5000000051+ 2900000052+ 2900000052+ 3920000053+ 1518036551+ 4268756451+ 2068965550+ 4039126950+ 1046921750+ 4984257951+
5000000051+ 3000000052+ 3000000052+ 4205000053+ 1518036551+ 4250626351+ 2000000050+ 4170573050+ 1012024350+ 4968886051+
5000000051+ 3100000052+ 3100000052+ 4500000053+ 1518036551+ 4233217251+ 1935483950+ 4301494850+ 9793783949+ 4954852951+
5000000051+ 3200000052+ 3200000052+ 4805000053+ 1518036551+ 4216479651+ 1875000050+ 4431915350+ 9487728149+ 4942048451+
5000000051+ 3300000052+ 3300000052+ 5120000053+ 1518036551+ 4200368751+ 1818181850+ 4561855250+ 9200221249+ 4930374651+
5000000051+ 3400000052+ 3400000052+ 5445000053+ 1518036551+ 4184844251+ 1764705950+ 4691333550+ 8929626549+ 4919744551+
5000000051+ 3500000052+ 3500000052+ 5780000053+ 1518036551+ 4169869051+ 1714285750+ 4820368650+ 8674494349+ 4910079451+
5000000051+ 3600000052+ 3600000052+ 6125000053+ 1518036551+ 4155409751+ 1666666750+ 4948977550+ 8433536149+ 4901309651+
5000000051+ 3700000052+ 3700000052+ 6480000053+ 1518036551+ 4141435451+ 1621621650+ 5077175950+ 8205602749+ 4893371251+
5000000051+ 3800000052+ 3800000052+ 6845000053+ 1518036551+ 4127918051+ 1578947450+ 5204978750+ 7989665849+ 4886207351+
5000000051+ 3900000052+ 3900000052+ 7220000053+ 1518036551+ 4114831651+ 1538461550+ 5332399750+ 7784802649+ 4879765851+
5000000051+ 4000000052+ 4000000052+ 7605000053+ 1518036551+ 4102152551+ 1500000050+ 5459452350+ 7590182549+ 4873999551+
5000000051+ 4100000052+ 4100000052+ 8000000053+ 1518036551+ 4089858651+ 1463414650+ 5586148350+ 7405056149+ 4868865551+
5000000051+ 4200000052+ 4200000052+ 8405000053+ 1518036551+ 4077929851+ 1428571450+ 5712500050+ 7228745249+ 4864324451+
5000000051+ 4300000052+ 4300000052+ 8820000053+ 1518036551+ 4066347151+ 1395348850+ 5838517950+ 7060634949+ 4860340151+
5000000051+ 4400000052+ 4400000052+ 9245000053+ 1518036551+ 4055093151+ 1363636450+ 5964212550+ 6900165949+ 4856879751+
5000000051+ 4500000052+ 4500000052+ 9680000053+ 1518036551+ 4044151851+ 1333333350+ 6089593850+ 6746828949+ 4853912851+
5000000051+ 4600000052+ 4600000052+ 1012500054+ 1518036551+ 4033507951+ 1304347850+ 6214671150+ 6600158749+ 4851411451+
5000000051+ 4700000052+ 4700000052+ 1058000054+ 1518036551+ 4023147551+ 1276595750+ 6339453450+ 6459729849+ 4849349751+
5000000051+ 4800000052+ 4800000052+ 1104500054+ 1518036551+ 4013057451+ 1250000050+ 6463948550+ 6325152149+ 4847703851+
5000000051+ 4900000052+ 4900000052+ 1152000054+ 1518036551+ 4003225451+ 1224489850+ 6588165350+ 6196067349+ 4846451651+
5000000051+ 5000000052+ 5000000052+ 1200500054+ 1518036551+ 3993640051+ 1200000050+ 6712110850+ 6072146049+ 4845572651+
5000000051+ 5100000052+ 5100000052+ 1250000054+ 1518036551+ 3984290551+ 1176470650+ 6835792550+ 5953084349+ 4845047751+
5000000051+ 5200000052+ 5200000052+ 1300500054+ 1518036551+ 3975166751+ 1153846250+ 6959217350+ 5838601949+ 4844859051+
5000000051+ 5300000052+ 5300000052+ 1352000054+ 1518036551+ 3966259251+ 1132075550+ 7082391950+ 5728439649+ 4844990451+
6000000051+ 1000000051+ 1000000051+ 5000000050+ 9637179650+ 6360000051+ 6000000051+ 2226000049+ 1927435951+ 1430969652+
6000000051+ 2000000051+ 2000000051+ 2000000051+ 9637179650+ 5960000051+ 3000000051+ 4174800049+ 9637179550+ 9969466051+
6000000051+ 3000000051+ 3000000051+ 4500000051+ 9637179650+ 5702777051+ 2000000051+ 5987916049+ 6424786350+ 8405134851+
6000000051+ 4000000051+ 4000000051+ 8000000051+ 9637179650+ 5510682851+ 1500000051+ 7714955849+ 4818589850+ 7569691451+
6000000051+ 5000000051+ 5000000051+ 1250000052+ 9637179650+ 5360291051+ 1200000051+ 9380509449+ 3854871850+ 7039583351+
6000000051+ 6000000051+ 6000000051+ 1800000052+ 9637179650+ 5237620051+ 1000000051+ 1099900250+ 3212393250+ 6668849351+
6000000051+ 7000000051+ 7000000051+ 2450000052+ 9637179650+ 5134614251+ 8571428650+ 1257980550+ 2753479950+ 6392903251+
6000000051+ 8000000051+ 8000000051+ 3200000052+ 9637179650+ 5046227451+ 7500000050+ 1412943850+ 2409294950+ 6178451351+
6000000051+ 9000000051+ 9000000051+ 4050000052+ 9637179650+ 4969100051+ 6666666750+ 1565266650+ 2141595450+ 6006452951+
6000000051+ 1000000052+ 1000000052+ 5000000052+ 9637179650+ 4900887851+ 6000000050+ 1715310750+ 1927435950+ 5865162551+
6000000051+ 1100000052+ 1100000052+ 6050000052+ 9637179650+ 4839894451+ 5454545550+ 1863359450+ 1752214550+ 5746906451+
6000000051+ 1200000052+ 1200000052+ 7200000052+ 9637179650+ 4784854251+ 5000000050+ 2009638850+ 1606196650+ 5646437851+
6000000051+ 1300000052+ 1300000052+ 8450000052+ 9637179650+ 4734799851+ 4615384650+ 2154333950+ 1482643050+ 5560036051+
6000000051+ 1400000052+ 1400000052+ 9800000052+ 9637179650+ 4688975851+ 4285714350+ 2297598150+ 1376739950+ 5484981051+
6000000051+ 1500000052+ 1500000052+ 1125000053+ 9637179650+ 4646782051+ 4000000050+ 2439560650+ 1284957350+ 5419233851+
6000000051+ 1600000052+ 1600000052+ 1280000053+ 9637179650+ 4607734251+ 3750000050+ 2580331250+ 1204647450+ 5361232051+
6000000051+ 1700000052+ 1700000052+ 1445000053+ 9637179650+ 4571436051+ 3529411850+ 2720004450+ 1133785850+ 5309756251+
6000000051+ 1800000052+ 1800000052+ 1620000053+ 9637179650+ 4537559851+ 3333333350+ 2858662750+ 1070797750+ 5263839251+
6000000051+ 1900000052+ 1900000052+ 1805000053+ 9637179650+ 4505831451+ 3157894750+ 2996377950+ 1014439950+ 5222702751+
6000000051+ 2000000052+ 2000000052+ 2000000053+ 9637179650+ 4476019051+ 3000000050+ 3133213350+ 9637179549+ 5185712151+
6000000051+ 2100000052+ 2100000052+ 2205000053+ 9637179650+ 4447925651+ 2857142950+ 3269225350+ 9178266249+ 5152345151+
6000000051+ 2200000052+ 2200000052+ 2420000053+ 9637179650+ 4421382251+ 2727272750+ 3404464350+ 8761072349+ 5122166651+
6000000051+ 2300000052+ 2300000052+ 2645000053+ 9637179650+ 4396242451+ 2608695750+ 3538975150+ 8380156149+ 5094811151+
6000000051+ 2400000052+ 2400000052+ 2880000053+ 9637179650+ 4372379451+ 2500000050+ 3672798850+ 8030982949+ 5069969151+
6000000051+ 2500000052+ 2500000052+ 3125000053+ 9637179650+ 4349682051+ 2400000050+ 3805971750+ 7709743649+ 5047376651+
6000000051+ 2600000052+ 2600000052+ 3380000053+ 9637179650+ 4328052551+ 2307692350+ 3938527750+ 7413215049+ 5026806751+
6000000051+ 2700000052+ 2700000052+ 3645000053+ 9637179650+ 4307404851+ 2222222250+ 4070497450+ 7138651549+ 5008063251+
6000000051+ 2800000052+ 2800000052+ 3920000053+ 9637179650+ 4287662251+ 2142857150+ 4201908950+ 6883699649+ 4990975851+
6000000051+ 2900000052+ 2900000052+ 4205000053+ 9637179650+ 4268756451+ 2068965550+ 4332787950+ 6646330749+ 4975395151+
6000000051+ 3000000052+ 3000000052+ 4500000053+ 9637179650+ 4250626351+ 2000000050+ 4463157750+ 6424786349+ 4961190051+
6000000051+ 3100000052+ 3100000052+ 4805000053+ 9637179650+ 4233217251+ 1935483950+ 4593040650+ 6217535249+ 4948245151+
6000000051+ 3200000052+ 3200000052+ 5120000053+ 9637179650+ 4216479651+ 1875000050+ 4722457250+ 6023237249+ 4936457751+
6000000051+ 3300000052+ 3300000052+ 5445000053+ 9637179650+ 4200368751+ 1818181850+ 4851426150+ 5840714849+ 4925736651+
6000000051+ 3400000052+ 3400000052+ 5780000053+ 9637179650+ 4184844251+ 1764705950+ 4979964450+ 5668929149+ 4916000551+
6000000051+ 3500000052+ 3500000052+ 6125000053+ 9637179650+ 4169869051+ 1714285750+ 5108089750+ 5506959749+ 4907176251+
6000000051+ 3600000052+ 3600000052+ 6480000053+ 9637179650+ 4155409751+ 1666666750+ 5235816450+ 5353988649+ 4899197951+
6000000051+ 3700000052+ 3700000052+ 6845000053+ 9637179650+ 4141435451+ 1621621650+ 5363158950+ 5209286249+ 4892006451+
6000000051+ 3800000052+ 3800000052+ 7220000053+ 9637179650+ 4127918051+ 1578947450+ 5490131150+ 5072197749+ 4885547851+
6000000051+ 3900000052+ 3900000052+ 7605000053+ 9637179650+ 4114831651+ 1538461550+ 5616745150+ 4942143349+ 4879773751+
6000000051+ 4000000052+ 4000000052+ 8000000053+ 9637179650+ 4102152551+ 1500000050+ 5743013550+ 4818589849+ 4874639851+
6000000051+ 4100000052+ 4100000052+ 8405000053+ 9637179650+ 4089858651+ 1463414650+ 5868947150+ 4701063249+ 4870105451+
6000000051+ 4200000052+ 4200000052+ 8820000053+ 9637179650+ 4077929851+ 1428571450+ 5994556950+ 4589133149+ 4866137951+
6000000051+ 4300000052+ 4300000052+ 9245000053+ 9637179650+ 4066347151+ 1395348850+ 6119852350+ 4482409149+ 4862691351+
6000000051+ 4400000052+ 4400000052+ 9680000053+ 9637179650+ 4055093151+ 1363636450+ 6244843450+ 4380536149+ 4859746451+
6000000051+ 4500000052+ 4500000052+ 1012500054+ 9637179650+ 4044151851+ 1333333350+ 6369539150+ 4283190949+ 4857270951+
6000000051+ 4600000052+ 4600000052+ 1058000054+ 9637179650+ 4033507951+ 1304347850+ 6493947850+ 4190078049+ 4855238351+
6000000051+ 4700000052+ 4700000052+ 1104500054+ 9637179650+ 4023147551+ 1276595750+ 6618077750+ 4100927449+ 4853624251+
6000000051+ 4800000052+ 4800000052+ 1152000054+ 9637179650+ 4013057451+ 1250000050+ 6741936550+ 4015491549+ 4852406051+
6000000051+ 4900000052+ 4900000052+ 1200500054+ 9637179650+ 4003225451+ 1224489850+ 6865531650+ 3933542749+ 4851563051+
6000000051+ 5000000052+ 5000000052+ 1250000054+ 9637179650+ 3993640051+ 1200000050+ 6988870050+ 3854871849+ 4851075751+
6000000051+ 5100000052+ 5100000052+ 1300500054+ 9637179650+ 3984290551+ 1176470650+ 7111958650+ 3779286149+ 4850926451+
6000000051+ 5200000052+ 5200000052+ 1352000054+ 9637179650+ 3975166751+ 1153846250+ 7234803550+ 3706607549+ 4851097851+
7000000051+ 1000000051+ 1000000051+ 1500000051+ 5700225750+ 6360000051+ 6000000051+ 6678000049+ 1140045151+ 1356682552+
7000000051+ 2000000051+ 2000000051+ 4000000051+ 5700225750+ 5964000051+ 3000000051+ 8349600049+ 5700225550+ 9617518651+
7000000051+ 3000000051+ 3000000051+ 7500000051+ 5700225750+ 5702777051+ 2000000051+ 9979860049+ 3800150350+ 8182590651+
7000000051+ 4000000051+ 4000000051+ 1200000052+ 5700225750+ 5510682851+ 1500000051+ 1157243450+ 2850112850+ 7411418451+
7000000051+ 5000000051+ 5000000051+ 1750000052+ 5700225750+ 5360291051+ 1200000051+ 1313271350+ 2280090250+ 6919627151+
7000000051+ 6000000051+ 6000000051+ 2400000052+ 5700225750+ 5237620051+ 1000000051+ 1466533650+ 1900075250+ 6574280951+
7000000051+ 7000000051+ 7000000051+ 3150000052+ 5700225750+ 5134614251+ 8571428650+ 1617403650+ 1628635950+ 6316361151+
7000000051+ 8000000051+ 8000000051+ 4000000052+ 5700225750+ 5046227451+ 7500000050+ 1766179650+ 1425056450+ 6115351051+
7000000051+ 9000000051+ 9000000051+ 4950000052+ 5700225750+ 4969100051+ 6666666750+ 1913103650+ 1266716850+ 5953748851+
7000000051+ 1000000052+ 1000000052+ 6000000052+ 5700225750+ 4900887851+ 6000000050+ 2058372950+ 1140045150+ 5820729651+
7000000051+ 1100000052+ 1100000052+ 7150000052+ 5700225750+ 4839894451+ 5454545550+ 2202152050+ 1036404650+ 5709204751+
7000000051+ 1200000052+ 1200000052+ 8400000052+ 5700225750+ 4784854251+ 5000000050+ 2344578650+ 9500375849+ 5614315951+
7000000051+ 1300000052+ 1300000052+ 9750000052+ 5700225750+ 4734799851+ 4615384650+ 2485769950+ 8769577749+ 5532611151+
7000000051+ 1400000052+ 1400000052+ 1120000053+ 5700225750+ 4688975851+ 4285714350+ 2625826450+ 8143179349+ 5461561651+
7000000051+ 1500000052+ 1500000052+ 1275000053+ 5700225750+ 4646782051+ 4000000050+ 2764835350+ 7603007349+ 5399268551+
7000000051+ 1600000052+ 1600000052+ 1440000053+ 5700225750+ 4607734251+ 3750000050+ 2902872550+ 7125281949+ 5344274351+
7000000051+ 1700000052+ 1700000052+ 1615000053+ 5700225750+ 4571436051+ 3529411850+ 3040004950+ 6706147649+ 5295439251+
7000000051+ 1800000052+ 1800000052+ 1800000053+ 5700225750+ 4537559851+ 3333333350+ 3176291850+ 6333583949+ 5251858151+
7000000051+ 1900000052+ 1900000052+ 1995000053+ 5700225750+ 4505831451+ 3157894750+ 3311786150+ 6000237449+ 5212801951+
7000000051+ 2000000052+ 2000000052+ 2200000053+ 5700225750+ 4476019051+ 3000000050+ 3446534750+ 5700225549+ 5177674851+
7000000051+ 2100000052+ 2100000052+ 2415000053+ 5700225750+ 4447925651+ 2857142950+ 3580580050+ 5428786249+ 5145985851+
7000000051+ 2200000052+ 2200000052+ 2640000053+ 5700225750+ 4421382251+ 2727272750+ 3713961050+ 5182023249+ 5117325851+
7000000051+ 2300000052+ 2300000052+ 2875000053+ 5700225750+ 4396242451+ 2608695750+ 3846712150+ 4956717849+ 5091350451+
7000000051+ 2400000052+ 2400000052+ 3120000053+ 5700225750+ 4372379451+ 2500000050+ 3978865350+ 4750187949+ 5067767851+
7000000051+ 2500000052+ 2500000052+ 3375000053+ 5700225750+ 4349682051+ 2400000050+ 4110449650+ 4560180449+ 5046328851+
7000000051+ 2600000052+ 2600000052+ 3640000053+ 5700225750+ 4328052551+ 2307692350+ 4241491550+ 4384788849+ 5026818851+
7000000051+ 2700000052+ 2700000052+ 3915000053+ 5700225750+ 4307404851+ 2222222250+ 4372015950+ 4222389349+ 5009052551+
7000000051+ 2800000052+ 2800000052+ 4200000053+ 5700225750+ 4287662251+ 2142857150+ 4502045450+ 4071589649+ 4992868351+
```

7000000051+	2900000052+	2900000052+	4495000053+	5700225750+	4268756451+	2068965550+	4631600750+	3931190049+	4978125051+
7000000051+	3000000052+	3000000052+	4800000053+	5700225750+	4250626351+	2000000050+	4760701350+	3800150349+	4964697951+
7000000051+	3100000052+	3100000052+	5115000053+	5700225750+	4233217251+	1935483950+	4889365850+	3677564849+	4952477851+
7000000051+	3200000052+	3200000052+	5440000053+	5700225750+	4216479651+	1875000050+	5017610650+	3562640949+	4941367151+
7000000051+	3300000052+	3300000052+	5775000053+	5700225750+	4200368751+	1818181850+	5145451550+	3454682149+	4931278951+
7000000051+	3400000052+	3400000052+	6120000053+	5700225750+	4184844251+	1764705950+	5272903850+	3353073849+	4922135951+
7000000051+	3500000052+	3500000052+	6475000053+	5700225750+	4169869051+	1714285750+	5399980350+	3257271749+	4913868351+
7000000051+	3600000052+	3600000052+	6840000053+	5700225750+	4155409751+	1666666750+	5526694750+	3166791949+	4906413851+
7000000051+	3700000052+	3700000052+	7215000053+	5700225750+	4141435451+	1621621650+	5653059250+	3081203049+	4899715551+
7000000051+	3800000052+	3800000052+	7600000053+	5700225750+	4127918051+	1578947450+	5779085350+	3000118749+	4893722451+
7000000051+	3900000052+	3900000052+	7995000053+	5700225750+	4114831651+	1538461550+	5904783350+	2923192649+	4888388051+
7000000051+	4000000052+	4000000052+	8400000053+	5700225750+	4102152551+	1500000050+	6030164350+	2850112849+	4883670051+
7000000051+	4100000052+	4100000052+	8815000053+	5700225750+	4089858651+	1463414650+	6155237350+	2780597849+	4879529851+
7000000051+	4200000052+	4200000052+	9240000053+	5700225750+	4077929851+	1428571450+	6280011950+	2714393149+	4875932051+
7000000051+	4300000052+	4300000052+	9675000053+	5700225750+	4066347151+	1395348850+	6404496750+	2651267749+	4872844451+
7000000051+	4400000052+	4400000052+	10120000054+	5700225750+	4055093151+	1363636450+	6528699850+	2591011649+	4870230851+
7000000051+	4500000052+	4500000052+	10575000054+	5700225750+	4044151851+	1333333350+	6652629850+	2533433649+	4868082451+
7000000051+	4600000052+	4600000052+	11040000054+	5700225750+	4033507951+	1304347850+	6776293350+	2478358949+	4866355651+
7000000051+	4700000052+	4700000052+	11515000054+	5700225750+	4023147551+	1276595750+	6899697950+	2425627949+	4865033251+
7000000051+	4800000052+	4800000052+	12000000054+	5700225750+	4013057451+	1250000050+	7022850450+	2375094049+	4864093351+
7000000051+	4900000052+	4900000052+	12495000054+	5700225750+	4003225451+	1224489850+	7145757350+	2326622749+	4863516351+
7000000051+	5000000052+	5000000052+	13000000054+	5700225750+	3993640051+	1200000050+	7268424850+	2280090249+	4863283451+
7000000051+	5100000052+	5100000052+	13515000054+	5700225750+	3984290551+	1176470650+	7390858850+	2235382549+	4863377351+
8000000051+	1000000051+	1000000051+	2500000051+	3140043150+	6360000051+	6000000051+	1113000050+	6280086250+	1309930952+
8000000051+	2000000051+	2000000051+	6000000051+	3140043150+	5964000051+	3000000051+	1252440050+	3140043150+	9403248351+
8000000051+	3000000051+	3000000051+	1050000052+	3140043150+	5702777051+	2000000051+	1397180450+	2093362150+	8051831251+
8000000051+	4000000051+	4000000051+	1600000052+	3140043150+	5510682851+	1500000051+	1542991250+	1570021650+	7321984151+
8000000051+	5000000051+	5000000051+	2250000052+	3140043150+	5360291051+	1200000051+	1688491750+	1256017250+	6854741951+
8000000051+	6000000051+	6000000051+	3000000052+	3140043150+	5237620051+	1000000051+	1833167050+	1046681050+	6525604851+
8000000051+	7000000051+	7000000051+	3850000052+	3140043150+	5134614251+	8571428650+	1976826650+	8971551749+	6279155351+
8000000051+	8000000051+	8000000051+	4800000052+	3140043150+	5046227451+	7500000050+	2119415550+	7850107849+	6086670151+
8000000051+	9000000051+	9000000051+	5850000052+	3140043150+	4969100051+	6666666750+	2260940650+	6977873649+	5931639551+
8000000051+	1000000052+	1000000052+	7000000052+	3140043150+	4900887851+	6000000050+	2401435150+	6280086249+	5803832251+
8000000051+	1100000052+	1100000052+	8250000052+	3140043150+	4839894451+	5454545550+	2540944550+	5709169349+	5696535251+
8000000051+	1200000052+	1200000052+	9600000052+	3140043150+	4784854251+	5000000050+	2679518350+	5233405249+	5605140151+
8000000051+	1300000052+	1300000052+	1105000053+	3140043150+	4734799851+	4615384650+	2817205950+	4830835549+	5526367351+
8000000051+	1400000052+	1400000052+	1260000053+	3140043150+	4688975851+	4285714350+	2954054850+	4485775949+	5457810551+
8000000051+	1500000052+	1500000052+	1425000053+	3140043150+	4646782051+	4000000050+	3090110150+	4186724149+	5397660251+
8000000051+	1600000052+	1600000052+	1600000053+	3140043150+	4607734251+	3750000050+	3225413950+	3925053949+	5344526151+
8000000051+	1700000052+	1700000052+	1785000053+	3140043150+	4571436051+	3529411850+	3360005550+	3694168449+	5297319551+
8000000051+	1800000052+	1800000052+	1980000053+	3140043150+	4537559851+	3333333350+	3493921150+	3488936849+	5255174651+
8000000051+	1900000052+	1900000052+	2185000053+	3140043150+	4505831451+	3157894750+	3627194350+	3305308549+	5217393451+
8000000051+	2000000052+	2000000052+	2400000053+	3140043150+	4476019051+	3000000050+	3759856150+	3140043149+	5183405051+
8000000051+	2100000052+	2100000052+	2625000053+	3140043150+	4447925651+	2857142950+	3891935050+	2990517249+	5152738651+
8000000051+	2200000052+	2200000052+	2860000053+	3140043150+	4421382251+	2727272750+	4023457850+	2854584649+	5125001151+
8000000051+	2300000052+	2300000052+	3105000053+	3140043150+	4396242451+	2608695750+	4154449250+	2730472349+	5099861651+
8000000051+	2400000052+	2400000052+	3360000053+	3140043150+	4372379451+	2500000050+	4284932150+	2616702649+	5077039651+
8000000051+	2500000052+	2500000052+	3625000053+	3140043150+	4349682051+	2400000050+	4414927250+	2512034549+	5056295051+
8000000051+	2600000052+	2600000052+	3900000053+	3140043150+	4328052551+	2307692350+	4544455450+	2415417849+	5037421451+
8000000051+	2700000052+	2700000052+	4185000053+	3140043150+	4307404851+	2222222250+	4673534150+	2325957949+	5020240051+
8000000051+	2800000052+	2800000052+	4480000053+	3140043150+	4287662251+	2142857150+	4802181850+	2242887949+	5004595051+
8000000051+	2900000052+	2900000052+	4785000053+	3140043150+	4268756451+	2068965550+	4930413450+	2165547049+	4990349851+
8000000051+	3000000052+	3000000052+	5100000053+	3140043150+	4250626351+	2000000050+	5058245350+	2093362149+	4977384451+
8000000051+	3100000052+	3100000052+	5425000053+	3140043150+	4233217251+	1935483950+	5185691050+	2025834349+	4965593051+
8000000051+	3200000052+	3200000052+	5760000053+	3140043150+	4216479651+	1875000050+	5312764150+	1962526949+	4954881351+
8000000051+	3300000052+	3300000052+	6105000053+	3140043150+	4200368751+	1818181850+	5439477650+	1903056449+	4945165351+
8000000051+	3400000052+	3400000052+	6460000053+	3140043150+	4184844251+	1764705950+	5565842950+	1847084249+	4936369951+
8000000051+	3500000052+	3500000052+	6825000053+	3140043150+	4169869051+	1714285750+	5691871150+	1794310349+	4928427851+
8000000051+	3600000052+	3600000052+	7200000053+	3140043150+	4155409751+	1666666750+	5817573650+	1744468449+	4921278551+
8000000051+	3700000052+	3700000052+	7585000053+	3140043150+	4141435451+	1621621650+	5942960050+	1697320649+	4914866851+
8000000051+	3800000052+	3800000052+	7980000053+	3140043150+	4127918051+	1578947450+	6068039550+	1652654349+	4909143251+
8000000051+	3900000052+	3900000052+	8385000053+	3140043150+	4114831651+	1538461550+	6192821550+	1610278549+	4904062851+
8000000051+	4000000052+	4000000052+	8800000053+	3140043150+	4102152951+	1500000050+	6317314850+	1570021649+	4899584251+
8000000051+	4100000052+	4100000052+	9225000053+	3140043150+	4089858651+	1463414650+	6441527350+	1531728349+	4895670151+
8000000051+	4200000052+	4200000052+	9660000053+	3140043150+	4077929851+	1428571450+	6565466950+	1495258649+	4892286251+
8000000051+	4300000052+	4300000052+	1010500054+	3140043150+	4066347151+	1395348850+	6689140950+	1460485249+	4889401051+
8000000051+	4400000052+	4400000052+	1056000054+	3140043150+	4055093151+	1363636450+	6812556450+	1427292349+	4886985251+
8000000051+	4500000052+	4500000052+	1102500054+	3140043150+	4044151851+	1333333350+	6935720450+	1395574749+	4885012851+
8000000051+	4600000052+	4600000052+	1150000054+	3140043150+	4033507951+	1304347850+	7058638950+	1365236149+	4883459051+
8000000051+	4700000052+	4700000052+	1198500054+	3140043150+	4023147551+	1276595750+	7181318350+	1336188649+	4882300851+
8000000051+	4800000052+	4800000052+	1248000054+	3140043150+	4013057451+	1250000050+	7303764450+	1308351349+	4881517351+
8000000051+	4900000052+	4900000052+	1298500054+	3140043150+	4003225451+	1224489850+	7425983150+	1281650249+	4881089251+
8000000051+	5000000052+	5000000052+	1350000054+	3140043150+	3993640051+	1200000050+	7547979650+	1256017249+	4880998251+
8000000051+	5100000052+	5100000052+	1402500054+	3140043150+	3984290551+	1176470650+	7669759250+	1231389549+	4881227451+
9000000051+	1000000051+	1000000051+	3500000051+	1612441650+	6360000051+	6000000051+	1558200050+	3224883250+	1283830852+
9000000051+	2000000051+	2000000051+	8000000051+	1612441650+	5964000051+	3000000051+	1669920050+	1612441650+	9292236251+
9000000051+	3000000051+	3000000051+	1350000052+	1612441650+	5702777051+	2000000051+	1796374850+	1074961150+	7989910651+
9000000051+	4000000051+	4000000051+	2000000052+	1612441650+	5510682851+	1500000051+	1928739150+	8062208049+	7284178851+
9000000051+	5000000051+	5000000051+	2750000052+	1612441650+	5360291051+	1200000051+	2063712050+	6449766449+	6831159951+
9000000051+	6000000051+	6000000051+	3600000052+	1612441650+	5237620051+	1000000051+	2199800350+	5374805349+	6511348151+
9000000051+	7000000051+	7000000051+	4550000052+	1612441650+	5134614251+	8571428650+	2336249650+	4606976049+	6271451951+
9000000051+	8000000051+	8000000051+	5600000052+	1612441650+	5046227451+	7500000050+	2472651450+	4031104049+	6083803551+
9000000051+	9000000051+	9000000051+	6750000052+	1612441650+	4969100051+	6666666750+	2608777650+	3583203649+	5932476551+
9000000051+	1000000052+	1000000052+	8000000052+	1612441650+	4900887851+	6000000050+	2744497150+	3224883249+	5807586351+
9000000051+	1100000052+	1100000052+	9350000052+	1612441650+	4839894451+	5454545550+	2879737250+	2931712049+	5702639851+
9000000051+	1200000052+	1200000052+	1080000053+	1612441650+	4784854251+	5000000050+	3014458250+	2687402749+	5613174051+
9000000051+	1300000052+	1300000052+	1235000053+	1612441650+	4734799851+	4615384650+	3148641950+	2480679449+	5536009351+
9000000051+	1400000052+	1400000052+	1400000053+	1612441650+	4688975851+	4285714350+	3282283150+	2303488049+	5468810451+
9000000051+	1500000052+	1500000052+	1575000053+	1612441650+	4646782051+	4000000050+	3415384850+	2149922149+	5409819751+
9000000051+	1600000052+	1600000052+	1760000053+	1612441650+	4607734251+	3750000050+	3547955350+	2015552049+	5357685251+
9000000051+	1700000052+	1700000052+	1955000053+	1612441650+	4571436051+	3529411850+	3680006050+	1896990149+	5311347751+
9000000051+	1800000052+	1800000052+	2160000053+	1612441650+	4537559851+	3333333350+	3811550250+	1791601849+	5269964151+
9000000051+	1900000052+	1900000052+	2375000053+	1612441650+	4505831451+	3157894750+	3942602650+	1697306949+	5232854351+
9000000051+	2000000052+	2000000052+	2600000053+	1612441650+	4476019051+	3000000050+	4073177250+	1612441649+	5199461151+
9000000051+	2100000052+	2100000052+	2835000053+	1612441650+	4447925651+	2857142950+	4203289750+	1535658749+	5169325551+
9000000051+	2200000052+	2200000052+	3080000053+	1612441650+	4421382251+	2727272750+	4332954550+	1465856049+	5142063651+
9000000051+	2300000052+	2300000052+	3335000053+	1612441650+	4396242451+	2608695750+	4462186150+	1402123149+	5117351851+
9000000051+	2400000052+	2400000052+	3600000053+	1612441650+	4372379451+	2500000050+	4590998350+	1343701349+	5094916251+
9000000051+	2500000052+	2500000052+	3875000053+	1612441650+	4349682051+	2400000050+	4719405250+	1289953349+	5074522051+
9000000051+	2600000052+	2600000052+	4160000053+	1612441650+	4328052551+	2307692350+	4847418850+	1240339749+	5055967051+
9000000051+	2700000052+	2700000052+	4455000053+	1612441650+	4307404851+	2222222250+	4975052650+	1194401249+	5039076351+
9000000051+	2800000052+	2800000052+	4760000053+	1612441650+	4287662251+	2142857150+	5102317950+	1151744049+	5023697151+
9000000051+	2900000052+	2900000052+	5075000053+	1612441650+	4268756451+	2068965550+	5229226650+	1112028749+	5009696051+
9000000051+	3000000052+	3000000052+	5400000053+	1612441650+	4250626351+	2000000050+	5355789050+	1074961149+	4996954851+
9000000051+	3100000052+	3100000052+	5735000053+	1612441650+	4233217251+	1935483950+	5482016550+	1040284949+	4985370151+
9000000051+	3200000052+	3200000052+	6080000053+	1612441650+	4216479651+	1875000050+	5607917850+	1007776049+	4974849251+
9000000051+	3300000052+	3300000052+	6435000053+	1612441650+	4200368751+	1818181850+	5733503350+	9772373348+	4965309651+
9000000051+	3400000052+	3400000052+	6800000053+	1612441650+	4184844251+	1764705950+	5858782150+	9484950648+	4956678051+

9000000051+	3500000052+	3500000052+	7175000053+	1612441650+	4169869051+	1714285750+	59837620 50+	9213952048+	4948887851+
9000000051+	3600000052+	3600000052+	7560000053+	1612441650+	4155409751+	1666666750+	6108452250+	8958008948+	4941879651+
9000000051+	3700000052+	3700000052+	7955000053+	1612441650+	4141435451+	1621621650+	6232860350+	8715900548+	4935599551+
9000000051+	3800000052+	3800000052+	8360000053+	1612441650+	4127918051+	1578947450+	6356993750+	8486534748+	4929998651+
9000000051+	3900000052+	3900000052+	8775000053+	1612441650+	4114831651+	1538461550+	6480859750+	8268913148+	4925032751+
9000000051+	4000000052+	4000000052+	9200000053+	1612441650+	4102152551+	1500000050+	6604465550+	8062208048+	4920661351+
9000000051+	4100000052+	4100000052+	9635000053+	1612441650+	4089858651+	1463414650+	6727817650+	7865568848+	4916847551+
9000000051+	4200000052+	4200000052+	10080000054+	1612441650+	4077929851+	1428571450+	6850921950+	7678293348+	4913557451+
9000000051+	4300000052+	4300000052+	10535000054+	1612441650+	4066347151+	1395348850+	6973785350+	7499728448+	4910760251+
9000000051+	4400000052+	4400000052+	11000000054+	1612441650+	4055093151+	1363636450+	7096413050+	7329280048+	4908427351+
9000000051+	4500000052+	4500000052+	11475000054+	1612441650+	4044151851+	1333333350+	7218810950+	7166407148+	4906532651+
9000000051+	4600000052+	4600000052+	11960000054+	1612441650+	4033507951+	1304347850+	7340984350+	7010615748+	4905051751+
9000000051+	4700000052+	4700000052+	12455000054+	1612441650+	4023147551+	1276595750+	7462938550+	6861453648+	4903962551+
9000000051+	4800000052+	4800000052+	12960000054+	1612441650+	4013057451+	1250000050+	7584678550+	6718506748+	4903243851+
9000000051+	4900000052+	4900000052+	13475000054+	1612441650+	4003225451+	1224489850+	7706208850+	6581394348+	4902876751+
9000000051+	5000000052+	5000000052+	14000000054+	1612441650+	3993640051+	1200000050+	7827534450+	6449766448+	4902843251+
9000000051+	5100000052+	5100000052+	14535000054+	1612441650+	3984290551+	1176470650+	7948659450+	6323300448+	4903126851+
1000000052+	1000000051+	1000000051+	4500000051+	7732207749+	6360000051+	6000000051+	2003400050+	1546441550+	1271498452+
1000000052+	2000000051+	2000000051+	1000000052+	7732207749+	5964000051+	3000000051+	2087400050+	7732207549+	9250062151+
1000000052+	3000000051+	3000000051+	1650000052+	7732207749+	5702777051+	2000000051+	2195569250+	5154805049+	7973882051+
1000000052+	4000000051+	4000000051+	2400000052+	7732207749+	5510682851+	1500000051+	2314486850+	3866103849+	7280792551+
1000000052+	5000000051+	5000000051+	3250000052+	7732207749+	5360291051+	1200000051+	2438932450+	3092883049+	6835113051+
1000000052+	6000000051+	6000000051+	4200000052+	7732207749+	5237620051+	1000000051+	2566433850+	2577402549+	6520037451+
1000000052+	7000000051+	7000000051+	5250000052+	7732207749+	5134614251+	8571428650+	2695672650+	2209202149+	6283416451+
1000000052+	8000000051+	8000000051+	6400000052+	7732207749+	5046227451+	7500000050+	2825887450+	1933051949+	6098146651+
1000000052+	9000000051+	9000000051+	7650000052+	7732207749+	4969100051+	6666666750+	2956614650+	1718268349+	5948610951+
1000000052+	1000000052+	1000000052+	9000000052+	7732207749+	4900887851+	6000000050+	3087559350+	1546441549+	5825108151+
1000000052+	1100000052+	1100000052+	1045000053+	7732207749+	4839894451+	5454545550+	3218529750+	1405855949+	5721260651+
1000000052+	1200000052+	1200000052+	1200000053+	7732207749+	4784854251+	5000000050+	3349397950+	1288701349+	5632681051+
1000000052+	1300000052+	1300000052+	1365000053+	7732207749+	4734799851+	4615384650+	3480077850+	1189570449+	5556241851+
1000000052+	1400000052+	1400000052+	1540000053+	7732207749+	4688975851+	4285714350+	3610511450+	1104601149+	5489644351+
1000000052+	1500000052+	1500000052+	1725000053+	7732207749+	4646782051+	4000000050+	3740659550+	1030961049+	5431157651+
1000000052+	1600000052+	1600000052+	1920000053+	7732207749+	4607734251+	3750000050+	3870496850+	9665259448+	5379449251+
1000000052+	1700000052+	1700000052+	2125000053+	7732207749+	4571436051+	3529411850+	4000006550+	9096714748+	5333474651+
1000000052+	1800000052+	1800000052+	2340000053+	7732207749+	4537559851+	3333333350+	4129179450+	8591341748+	5292402351+
1000000052+	1900000052+	1900000052+	2565000053+	7732207749+	4505831451+	3157894750+	4258010850+	8139165848+	5255561251+
1000000052+	2000000052+	2000000052+	2800000053+	7732207749+	4476019051+	3000000050+	4386498650+	7732207548+	5222401151+
1000000052+	2100000052+	2100000052+	3045000053+	7732207749+	4447925651+	2857142950+	4514644350+	7364007148+	5192468351+
1000000052+	2200000052+	2200000052+	3300000053+	7732207749+	4421382251+	2727272750+	4642451450+	7029279548+	5165383951+
1000000052+	2300000052+	2300000052+	3565000053+	7732207749+	4396242451+	2608695750+	4769923050+	6723658748+	5140821051+
1000000052+	2400000052+	2400000052+	3840000053+	7732207749+	4372379451+	2500000050+	4897065050+	6443506348+	5118529451+
1000000052+	2500000052+	2500000052+	4125000053+	7732207749+	4349682051+	2400000050+	5023882850+	6185766048+	5098256151+
1000000052+	2600000052+	2600000052+	4420000053+	7732207749+	4328052551+	2307692350+	5150382350+	5947851948+	5079807851+
1000000052+	2700000052+	2700000052+	4725000053+	7732207749+	4307404851+	2222222250+	5276571150+	5727561148+	5063011751+
1000000052+	2800000052+	2800000052+	5040000053+	7732207749+	4287662251+	2142857150+	5402454350+	5523005448+	5047716351+
1000000052+	2900000052+	2900000052+	5365000053+	7732207749+	4268756451+	2068965550+	5528039750+	5332556948+	5033789651+
1000000052+	3000000052+	3000000052+	5700000053+	7732207749+	4250626351+	2000000050+	5653330050+	5154805048+	5021114451+
1000000052+	3100000052+	3100000052+	6045000053+	7732207749+	4233217251+	1935483950+	5778341650+	4988521048+	5009588351+
1000000052+	3200000052+	3200000052+	6400000053+	7732207749+	4216479651+	1875000050+	5903071350+	4832629748+	4999119351+
1000000052+	3300000052+	3300000052+	6765000053+	7732207749+	4200368751+	1818181850+	6027529150+	4686186448+	4989626051+
1000000052+	3400000052+	3400000052+	7140000053+	7732207749+	4184844251+	1764705950+	6151721250+	4548357448+	4981035351+
1000000052+	3500000052+	3500000052+	7525000053+	7732207749+	4169869051+	1714285750+	6275652950+	4418404348+	4973281351+
1000000052+	3600000052+	3600000052+	7920000053+	7732207749+	4155409751+	1666666750+	6399331150+	4295670848+	4966305251+
1000000052+	3700000052+	3700000052+	8325000053+	7732207749+	4141435451+	1621621650+	6522760850+	4179571648+	4960053351+
1000000052+	3800000052+	3800000052+	8740000053+	7732207749+	4127918051+	1578947450+	6645947950+	4069582948+	4954477151+
1000000052+	3900000052+	3900000052+	9165000053+	7732207749+	4114831651+	1538461550+	6768897950+	3965234648+	4949532851+
1000000052+	4000000052+	4000000052+	9600000053+	7732207749+	4102152551+	1500000050+	6891616350+	3866103848+	4945180251+
1000000052+	4100000052+	4100000052+	10045000054+	7732207749+	4089858651+	1463414650+	7014107650+	3771808548+	4941382751+
1000000052+	4200000052+	4200000052+	10500000054+	7732207749+	4077929851+	1428571450+	7136377150+	3682003648+	4938106651+
1000000052+	4300000052+	4300000052+	10965000054+	7732207749+	4066347151+	1395348850+	7258429550+	3596375648+	4935321451+
1000000052+	4400000052+	4400000052+	11440000054+	7732207749+	4055093151+	1363636450+	7380269550+	3514639848+	4932998351+
1000000052+	4500000052+	4500000052+	11925000054+	7732207749+	4044151851+	1333333350+	7501901650+	3436536748+	4931111851+
1000000052+	4600000052+	4600000052+	12420000054+	7732207749+	4033507951+	1304347850+	7623330050+	3361829348+	4929637551+
1000000052+	4700000052+	4700000052+	12925000054+	7732207749+	4023147551+	1276595750+	7744558950+	3290301148+	4928553351+
1000000052+	4800000052+	4800000052+	13440000054+	7732207749+	4013057451+	1250000050+	7865592550+	3221753148+	4927838551+
1000000052+	4900000052+	4900000052+	13965000054+	7732207749+	4003225451+	1224489850+	7986434750+	3156003148+	4927473951+
1000000052+	5000000052+	5000000052+	14500000054+	7732207749+	3993640051+	1200000050+	8107089250+	3092883048+	4927441851+
1000000052+	5100000052+	5100000052+	15045000054+	7732207749+	3984290551+	1176470650+	8227560050+	3032238248+	4927725851+
1100000052+	1000000051+	1000000051+	5500000051+	3470303549+	6360000051+	6000000051+	2448600050+	6940607049+	1267426652+
1100000052+	2000000051+	2000000051+	1200000052+	3470303549+	5964000051+	3000000051+	2504880050+	3470303549+	9249191051+
1100000052+	3000000051+	3000000051+	1950000052+	3470303549+	5702777051+	2000000051+	2594763550+	2313535749+	7985388851+
1100000052+	4000000051+	4000000051+	2800000052+	3470303549+	5510682851+	1500000051+	2700234550+	1735151849+	7298057851+
1100000052+	5000000051+	5000000051+	3750000052+	3470303549+	5360291051+	1200000051+	2814152850+	1388121449+	6855587551+
1100000052+	6000000051+	6000000051+	4800000052+	3470303549+	5237620051+	1000000051+	2933067250+	1156767849+	6542494451+
1100000052+	7000000051+	7000000051+	5950000052+	3470303549+	5134614251+	8571428650+	3055095450+	9915152948+	6307181851+
1100000052+	8000000051+	8000000051+	7200000052+	3470303549+	5046227451+	7500000050+	3179123350+	8675758848+	6122815551+
1100000052+	9000000051+	9000000051+	8550000052+	3470303549+	4969100051+	6666666750+	3304451650+	7711785648+	5973923751+
1100000052+	1000000052+	1000000052+	1000000053+	3470303549+	4900887851+	6000000050+	3430621550+	6940607048+	5850890651+
1100000052+	1100000052+	1100000052+	1155000053+	3470303549+	4839894451+	5454545550+	3557322450+	6309642748+	5747390851+
1100000052+	1200000052+	1200000052+	1320000053+	3470303549+	4784854251+	5000000050+	3684337850+	5783839248+	5659071851+
1100000052+	1300000052+	1300000052+	1495000053+	3470303549+	4734799851+	4615384650+	3811513850+	5338928548+	5582828651+
1100000052+	1400000052+	1400000052+	1680000053+	3470303549+	4688975851+	4285714350+	3938739650+	4957576448+	5516378851+
1100000052+	1500000052+	1500000052+	1875000053+	3470303549+	4646782051+	4000000050+	4065934350+	4627071348+	5458002551+
1100000052+	1600000052+	1600000052+	2080000053+	3470303549+	4607734251+	3750000050+	4193038150+	4337879448+	5406375951+
1100000052+	1700000052+	1700000052+	2295000053+	3470303549+	4571436051+	3529411850+	4320007250+	4082710048+	5360460651+
1100000052+	1800000052+	1800000052+	2520000053+	3470303549+	4537559851+	3333333350+	4446808750+	3855892848+	5319429951+
1100000052+	1900000052+	1900000052+	2755000053+	3470303549+	4505831451+	3157894750+	4573419150+	3652951148+	5282615851+
1100000052+	2000000052+	2000000052+	3000000053+	3470303549+	4476019051+	3000000050+	4699820050+	3470303548+	5249471351+
1100000052+	2100000052+	2100000052+	3255000053+	3470303549+	4447925651+	2857142950+	4825999550+	3305051048+	5219545051+
1100000052+	2200000052+	2200000052+	3520000053+	3470303549+	4421382251+	2727272750+	4951948250+	3154821448+	5192459151+
1100000052+	2300000052+	2300000052+	3795000053+	3470303549+	4396242451+	2608695750+	5077660050+	3017655248+	5167895751+
1100000052+	2400000052+	2400000052+	4080000053+	3470303549+	4372379451+	2500000050+	5203131750+	2891919648+	5145584551+
1100000052+	2500000052+	2500000052+	4375000053+	3470303549+	4349682051+	2400000050+	5328360450+	2776242848+	5125294251+
1100000052+	2600000052+	2600000052+	4680000053+	3470303549+	4328052551+	2307692350+	5453346250+	2669464248+	5106825851+
1100000052+	2700000052+	2700000052+	4995000053+	3470303549+	4307404851+	2222222250+	5578089350+	2570595248+	5090006551+
1100000052+	2800000052+	2800000052+	5320000053+	3470303549+	4287662251+	2142857150+	5702590750+	2478788248+	5074685851+
1100000052+	2900000052+	2900000052+	5655000053+	3470303549+	4268756451+	2068965550+	5826852450+	2393312848+	5060731551+
1100000052+	3000000052+	3000000052+	6000000053+	3470303549+	4250626351+	2000000050+	5950877050+	2313535748+	5048027551+
1100000052+	3100000052+	3100000052+	6355000053+	3470303549+	4233217251+	1935483950+	6074666850+	2238905548+	5036471251+
1100000052+	3200000052+	3200000052+	6720000053+	3470303549+	4216479651+	1875000050+	6198225050+	2168939748+	5025971051+
1100000052+	3300000052+	3300000052+	7095000053+	3470303549+	4200368751+	1818181850+	6321554850+	2103214248+	5016445651+
1100000052+	3400000052+	3400000052+	7480000053+	3470303549+	4184844251+	1764705950+	6444660350+	2041355048+	5007822251+
1100000052+	3500000052+	3500000052+	7875000053+	3470303549+	4169869051+	1714285750+	6567543750+	1983030648+	5000035051+
1100000052+	3600000052+	3600000052+	8280000053+	3470303549+	4155409751+	1666666750+	6690209450+	1927946448+	4993025251+
1100000052+	3700000052+	3700000052+	8695000053+	3470303549+	4141435451+	1621621650+	6812661450+	1875839748+	4986739551+
1100000052+	3800000052+	3800000052+	9120000053+	3470303549+	4127918051+	1578947450+	6934902150+	1826475548+	4981129451+
1100000052+	3900000052+	3900000052+	9555000053+	3470303549+	4114831651+	1538461550+	7056936250+	1779642848+	4976151051+
1100000052+	4000000052+	4000000052+	10000000054+	3470303549+	4102152551+	1500000050+	7178767050+	1735151848+	4971764451+

1100000052+	4100000052+	4100000052+	10455000054+	3470303549+	4089858651+	1463414650+	7300397650+	1692831048+	4967932751+
1100000052+	4200000052+	4200000052+	10920000054+	3470303549+	4077929851+	1428571450+	7421832150+	1652523548+	4964622651+
1100000052+	4300000052+	4300000052+	11395000054+	3470303549+	4066347151+	1395348850+	7543074050+	1614094748+	4961803551+
1100000052+	4400000052+	4400000052+	11880000054+	3470303549+	4055093151+	1363636450+	7664125950+	1577410748+	4959446751+
1100000052+	4500000052+	4500000052+	12375000054+	3470303549+	4044151851+	1333333350+	7784992250+	1542357148+	4957526751+
1100000052+	4600000052+	4600000052+	12880000054+	3470303549+	4033507951+	1304347850+	7905675450+	1508827648+	4956019051+
1100000052+	4700000052+	4700000052+	13395000054+	3470303549+	4023147551+	1276595750+	8026179450+	1476724948+	4954901751+
1100000052+	4800000052+	4800000052+	13920000054+	3470303549+	4013057451+	1250000050+	8146506550+	1445959848+	4954154151+
1100000052+	4900000052+	4900000052+	14455000054+	3470303549+	4003225451+	1224489850+	8266660450+	1416450448+	4953756951+
1100000052+	5000000052+	5000000052+	15000000054+	3470303549+	3993640051+	1200000050+	8386644050+	1388121448+	4953692551+
1100000052+	5100000052+	5100000052+	15555000054+	3470303549+	3984290551+	1176470650+	8506460250+	1360903348+	4953944551+
1200000052+	1000000051+	1000000051+	6500000051+	1461301549+	6360000051+	6000000051+	2893800050+	2922603049+	1267860652+
1200000052+	2000000051+	2000000051+	14000000052+	1461301549+	5964000051+	3000000051+	2922360050+	1461301549+	9270849051+
1200000052+	3000000051+	3000000051+	22500000052+	1461301549+	5702777051+	2000000051+	2993957950+	9742010048+	8011914851+
1200000052+	4000000051+	4000000051+	32000000052+	1461301549+	5510682851+	1500000051+	3085982550+	7306507548+	7326587651+
1200000052+	5000000051+	5000000051+	42500000052+	1461301549+	5360291051+	1200000051+	3189373250+	5845206048+	6885073551+
1200000052+	6000000051+	6000000051+	54000000052+	1461301549+	5237620051+	1000000051+	3299700750+	4871005048+	6572461151+
1200000052+	7000000051+	7000000051+	66500000052+	1461301549+	5134614251+	8571428650+	3414518450+	4175147148+	6337384051+
1200000052+	8000000051+	8000000051+	80000000052+	1461301549+	5046227451+	7500000050+	3532359150+	3653253848+	6153116651+
1200000052+	9000000051+	9000000051+	94500000052+	1461301549+	4969100051+	6666666750+	3652288650+	3247336748+	6004242951+
1200000052+	1000000052+	1000000052+	1100000053+	1461301549+	4900887851+	6000000050+	3773683650+	2922603048+	5881178851+
1200000052+	1100000052+	1100000052+	12650000053+	1461301549+	4839894451+	5454545550+	3896115050+	2656911848+	5777617451+
1200000052+	1200000052+	1200000052+	14400000053+	1461301549+	4784854251+	5000000050+	4019277550+	2435502548+	5689217551+
1200000052+	1300000052+	1300000052+	16250000053+	1461301549+	4734799851+	4615384650+	4142949850+	2248156248+	5612881551+
1200000052+	1400000052+	1400000052+	18200000053+	1461301549+	4688975851+	4285714350+	4266968050+	2087573648+	5546331651+
1200000052+	1500000052+	1500000052+	20250000053+	1461301549+	4646782051+	4000000050+	4391209050+	1948402048+	5487851351+
1200000052+	1600000052+	1600000052+	22400000053+	1461301549+	4607734251+	3750000050+	4515579750+	1826626948+	5436118851+
1200000052+	1700000052+	1700000052+	24650000053+	1461301549+	4571436051+	3529411850+	4640007650+	1719178248+	5390097251+
1200000052+	1800000052+	1800000052+	27000000053+	1461301549+	4537559851+	3333333350+	4764437650+	1623668348+	5348960651+
1200000052+	1900000052+	1900000052+	29450000053+	1461301549+	4505831451+	3157894750+	4888826950+	1538212148+	5312041851+
1200000052+	2000000052+	2000000052+	32000000053+	1461301549+	4476019051+	3000000050+	5013141550+	1461301548+	5278794551+
1200000052+	2100000052+	2100000052+	34650000053+	1461301549+	4447925651+	2857142950+	5137353850+	1391715748+	5248767051+
1200000052+	2200000052+	2200000052+	37400000053+	1461301549+	4421382251+	2727272750+	5261444550+	1328455948+	5221582551+
1200000052+	2300000052+	2300000052+	40250000053+	1461301549+	4396242451+	2608695750+	5385397050+	1270697048+	5196922451+
1200000052+	2400000052+	2400000052+	43200000053+	1461301549+	4372379451+	2500000050+	5509197950+	1217751348+	5174517051+
1200000052+	2500000052+	2500000052+	46250000053+	1461301549+	4349682051+	2400000050+	5632838050+	1169041248+	5154134851+
1200000052+	2600000052+	2600000052+	49400000053+	1461301549+	4328052551+	2307692350+	5756309650+	1124078148+	5135576851+
1200000052+	2700000052+	2700000052+	52650000053+	1461301549+	4307404851+	2222222250+	5879607450+	1082445648+	5118670151+
1200000052+	2800000052+	2800000052+	56000000053+	1461301549+	4287662251+	2142857150+	6002727150+	1043786848+	5103264451+
1200000052+	2900000052+	2900000052+	59450000053+	1461301549+	4268756451+	2068965550+	6125665550+	1007794148+	5089227451+
1200000052+	3000000052+	3000000052+	63000000053+	1461301549+	4250626351+	2000000050+	6248420750+	9742010047+	5076442651+
1200000052+	3100000052+	3100000052+	66650000053+	1461301549+	4233217251+	1935483950+	6370991950+	9427751647+	5064807651+
1200000052+	3200000052+	3200000052+	70400000053+	1461301549+	4216479651+	1875000050+	6493378450+	9133134447+	5054230751+
1200000052+	3300000052+	3300000052+	74250000053+	1461301549+	4200368751+	1818181850+	6615580950+	8856372747+	5044630651+
1200000052+	3400000052+	3400000052+	78200000053+	1461301549+	4184844251+	1764705950+	6737599150+	8595891247+	5035934351+
1200000052+	3500000052+	3500000052+	82250000053+	1461301549+	4169869051+	1714285750+	6859434650+	8350294347+	5028076151+
1200000052+	3600000052+	3600000052+	86400000053+	1461301549+	4155409751+	1666666750+	6981088350+	8118341747+	5020997051+
1200000052+	3700000052+	3700000052+	90650000053+	1461301549+	4141435451+	1621621650+	7102561650+	7898927047+	5014643751+
1200000052+	3800000052+	3800000052+	95000000053+	1461301549+	4127918051+	1578947450+	7223856650+	7691060547+	5008967551+
1200000052+	3900000052+	3900000052+	99450000053+	1461301549+	4114831651+	1538461550+	7344974450+	7493853847+	5003924651+
1200000052+	4000000052+	4000000052+	10400000054+	1461301549+	4102152551+	1500000050+	7465917550+	7306507547+	4999475051+
1200000052+	4100000052+	4100000052+	10865000054+	1461301549+	4089858651+	1463414650+	7586687850+	7128300047+	4995581751+
1200000052+	4200000052+	4200000052+	11340000054+	1461301549+	4077929851+	1428571450+	7707287450+	6958578647+	4992211551+
1200000052+	4300000052+	4300000052+	11825000054+	1461301549+	4066347151+	1395348850+	7827718150+	6796751247+	4989333551+
1200000052+	4400000052+	4400000052+	12320000054+	1461301549+	4055093151+	1363636450+	7947982950+	6642279547+	4986919251+
1200000052+	4500000052+	4500000052+	12825000054+	1461301549+	4044151851+	1333333350+	8068082950+	6496473347+	4984942951+
1200000052+	4600000052+	4600000052+	13340000054+	1461301549+	4033507951+	1304347850+	8188021150+	6353484847+	4983380151+
1200000052+	4700000052+	4700000052+	13865000054+	1461301549+	4023147551+	1276595750+	8307799650+	6218304347+	4982208951+
1200000052+	4800000052+	4800000052+	14400000054+	1461301549+	4013057451+	1250000050+	8427420650+	6088756347+	4981408451+
1200000052+	4900000052+	4900000052+	14945000054+	1461301549+	4003225451+	1224489850+	8546886350+	5964495947+	4980959451+
1200000052+	5000000052+	5000000052+	15500000054+	1461301549+	3993640051+	1200000050+	8666198850+	5845206047+	4980844451+
1200000052+	5100000052+	5100000052+	16065000054+	1461301549+	3984290551+	1176470650+	8785360650+	5730594147+	4981046851+
1300000052+	1000000051+	1000000051+	7500000051+	5787005848+	6360000051+	6000000051+	3339000050+	1157401249+	1270547452+
1300000052+	2000000051+	2000000051+	16000000052+	5787005848+	5964000051+	3000000051+	3339840050+	5787006048+	9303771051+
1300000052+	3000000051+	3000000051+	25500000052+	5787005848+	5702777051+	2000000051+	3393152350+	3858004048+	8045950251+
1300000052+	4000000051+	4000000051+	36000000052+	5787005848+	5510682851+	1500000051+	3471730350+	2893503048+	7360749351+
1300000052+	5000000051+	5000000051+	47500000052+	5787005848+	5360291051+	1200000051+	3564593450+	2314802448+	6919065151+
1300000052+	6000000051+	6000000051+	60000000052+	5787005848+	5237620051+	1000000051+	3666334050+	1929002048+	6606182451+
1300000052+	7000000051+	7000000051+	73500000052+	5787005848+	5134614251+	8571428650+	3773941450+	1653430348+	6370804651+
1300000052+	8000000051+	8000000051+	88000000052+	5787005848+	5046227451+	7500000050+	3885595150+	1446751548+	6186233751+
1300000052+	9000000051+	9000000051+	10350000053+	5787005848+	4969100051+	6666666750+	4000125650+	1286001348+	6037065351+
1300000052+	1000000052+	1000000052+	12000000053+	5787005848+	4900887851+	6000000050+	4116745850+	1157401248+	5913719851+
1300000052+	1100000052+	1100000052+	13750000053+	5787005848+	4839894451+	5454545550+	4234907650+	1052182948+	5809892051+
1300000052+	1200000052+	1200000052+	15600000053+	5787005848+	4784854251+	5000000050+	4354217350+	9645010047+	5721240451+
1300000052+	1300000052+	1300000052+	17550000053+	5787005848+	4734799851+	4615384650+	4474385850+	8903086247+	5644667251+
1300000052+	1400000052+	1400000052+	19600000053+	5787005848+	4688975851+	4285714350+	4595196350+	8267151447+	5577893551+
1300000052+	1500000052+	1500000052+	21750000053+	5787005848+	4646782051+	4000000050+	4716483850+	7716008047+	5519202051+
1300000052+	1600000052+	1600000052+	24000000053+	5787005848+	4607734251+	3750000050+	4838120950+	7233757547+	5467269751+
1300000052+	1700000052+	1700000052+	26350000053+	5787005848+	4571436051+	3529411850+	4960008150+	6808242447+	5421058851+
1300000052+	1800000052+	1800000052+	28800000053+	5787005848+	4537559851+	3333333350+	5082066950+	6430006747+	5379742851+
1300000052+	1900000052+	1900000052+	31350000053+	5787005848+	4505831451+	3157894750+	5204235150+	6091585347+	5342653651+
1300000052+	2000000052+	2000000052+	34000000053+	5787005848+	4476019051+	3000000050+	5326463050+	5787006047+	5309244051+
1300000052+	2100000052+	2100000052+	36750000053+	5787005848+	4447925651+	2857142950+	5448709050+	5511434347+	5279061951+
1300000052+	2200000052+	2200000052+	39600000053+	5787005848+	4421382251+	2727272750+	5570941850+	5260914547+	5251729851+
1300000052+	2300000052+	2300000052+	42550000053+	5787005848+	4396242451+	2608695750+	5693133950+	5032179147+	5226928651+
1300000052+	2400000052+	2400000052+	45600000053+	5787005848+	4372379451+	2500000050+	5815264650+	4822505047+	5204388251+
1300000052+	2500000052+	2500000052+	48750000053+	5787005848+	4349682051+	2400000050+	5937316050+	4629604847+	5183876651+
1300000052+	2600000052+	2600000052+	52000000053+	5787005848+	4328052551+	2307692350+	6059273550+	4451543147+	5165194351+
1300000052+	2700000052+	2700000052+	55350000053+	5787005848+	4307404851+	2222222250+	6181125950+	4286671147+	5148168351+
1300000052+	2800000052+	2800000052+	58800000053+	5787005848+	4287662251+	2142857150+	6302863650+	4133575747+	5132647751+
1300000052+	2900000052+	2900000052+	62350000053+	5787005848+	4268756451+	2068965550+	6424478350+	3991038647+	5118499951+
1300000052+	3000000052+	3000000052+	66000000053+	5787005848+	4250626351+	2000000050+	6545964750+	3858004047+	5105608651+
1300000052+	3100000052+	3100000052+	69750000053+	5787005848+	4233217251+	1935483950+	6667317150+	3733552347+	5093870751+
1300000052+	3200000052+	3200000052+	73600000053+	5787005848+	4216479651+	1875000050+	6788532250+	3616878847+	5083194551+
1300000052+	3300000052+	3300000052+	77550000053+	5787005848+	4200368751+	1818181850+	6909606450+	3507276447+	5073498251+
1300000052+	3400000052+	3400000052+	81600000053+	5787005848+	4184844251+	1764705950+	7030538250+	3404121247+	5064709051+
1300000052+	3500000052+	3500000052+	85750000053+	5787005848+	4169869051+	1714285750+	7151325450+	3306860647+	5056760851+
1300000052+	3600000052+	3600000052+	90000000053+	5787005848+	4155409751+	1666666750+	7271966950+	3215003347+	5049594651+
1300000052+	3700000052+	3700000052+	94350000053+	5787005848+	4141435451+	1621621650+	7392462250+	3128111447+	5043156651+
1300000052+	3800000052+	3800000052+	98800000053+	5787005848+	4127918051+	1578947450+	7512810850+	3045792647+	5037398451+
1300000052+	3900000052+	3900000052+	10335000054+	5787005848+	4114831651+	1538461550+	7633012850+	2967695447+	5032275991+
1300000052+	4000000052+	4000000052+	10800000054+	5787005848+	4102152551+	1500000050+	7753068350+	2893503047+	5027748751+
1300000052+	4100000052+	4100000052+	11275000054+	5787005848+	4089858651+	1463414650+	7872977850+	2822929847+	5023780251+
1300000052+	4200000052+	4200000052+	11760000054+	5787005848+	4077929851+	1428571450+	7992742450+	2755717147+	5020336751+
1300000052+	4300000052+	4300000052+	12255000054+	5787005848+	4066347151+	1395348850+	8112362650+	2691630747+	5017387551+
1300000052+	4400000052+	4400000052+	12760000054+	5787005848+	4055093151+	1363636450+	8231839150+	2630457347+	5014903651+
1300000052+	4500000052+	4500000052+	13275000054+	5787005848+	4044151851+	1333333350+	8351173650+	2572002747+	5012859751+
1300000052+	4600000052+	4600000052+	13800000054+	5787005848+	4033507951+	1304347850+	8470366550+	2516089647+	5011231051+

1300000052+	4700000052+	4700000052+	1433500054+	5787005848+	4023147551+	1276595750+	8589419850+	2462555747+	5009995451+
1300000052+	4800000052+	4800000052+	1488000054+	5787005848+	4013057451+	1250000050+	8708334650+	2411252547+	5009132051+
1300000052+	4900000052+	4900000052+	1543500054+	5787005848+	4003225451+	1224489850+	8827112050+	2362043347+	5008621851+
1300000052+	5000000052+	5000000052+	1600000054+	5787005848+	3993640051+	1200000050+	8945753650+	2314802447+	5008446951+
1300000052+	5100000052+	5100000052+	1657500054+	5787005848+	3984290551+	1176470650+	9064261050+	2269414147+	5008590651+
1400000052+	1000000051+	1000000051+	8500000051+	2160002248+	6360000051+	6000000051+	37842000 50+	4320004448+	1274274052+
1400000052+	2000000051+	2000000051+	1800000052+	2160002248+	5964000051+	3000000051+	3757320050+	2160002248+	9341892051+
1400000052+	3000000051+	3000000051+	2850000052+	2160002248+	5702777051+	2000000051+	3792346750+	1440001548+	8083451751+
1400000052+	4000000051+	4000000051+	4000000052+	2160002248+	5510682851+	1500000051+	3857478050+	1080001148+	7397510651+
1400000052+	5000000051+	5000000051+	5250000052+	2160002248+	5360291051+	1200000051+	3939814050+	8640008847+	6955130451+
1400000052+	6000000051+	6000000051+	6600000052+	2160002248+	5237620051+	1000000051+	4032967350+	7200007347+	6641636751+
1400000052+	7000000051+	7000000051+	8050000052+	2160002248+	5134614251+	8571428650+	4133364450+	6171434947+	6405710651+
1400000052+	8000000051+	8000000051+	9600000052+	2160002248+	5046227451+	7500000050+	4238831050+	5400005547+	6220650551+
1400000052+	9000000051+	9000000051+	1125000053+	2160002248+	4969100051+	6666666750+	4347962650+	4800004947+	6071043051+
1400000052+	1000000052+	1000000052+	1300000053+	2160002248+	4900887851+	6000000050+	4459807950+	4320004447+	5947300651+
1400000052+	1100000052+	1100000052+	1485000053+	2160002248+	4839894451+	5454545550+	4573700250+	3927276747+	5843111751+
1400000052+	1200000052+	1200000052+	1680000053+	2160002248+	4784854251+	5000000050+	4689157250+	3600003747+	5754129951+
1400000052+	1300000052+	1300000052+	1885000053+	2160002248+	4734799851+	4615384650+	4805821850+	3323080347+	5677252851+
1400000052+	1400000052+	1400000052+	2100000053+	2160002248+	4688975851+	4285714350+	4923424650+	3085717447+	5610198351+
1400000052+	1500000052+	1500000052+	2325000053+	2160002248+	4646782051+	4000000050+	5041758450+	2880002947+	5551245851+
1400000052+	1600000052+	1600000052+	2560000053+	2160002248+	4607734251+	3750000050+	5160662550+	2700002847+	5499070551+
1400000052+	1700000052+	1700000052+	2805000053+	2160002248+	4571436051+	3529411850+	5280008650+	2541179147+	5452632251+
1400000052+	1800000052+	1800000052+	3060000053+	2160002248+	4537559851+	3333333350+	5399696250+	2400002447+	5411102751+
1400000052+	1900000052+	1900000052+	3325000053+	2160002248+	4505831451+	3157894750+	5519643250+	2273686547+	5373812651+
1400000052+	2000000052+	2000000052+	3600000053+	2160002248+	4476019051+	3000000050+	5639784050+	2160002247+	5340213451+
1400000052+	2100000052+	2100000052+	3885000053+	2160002248+	4447925651+	2857142950+	5760063850+	2057145047+	5309852051+
1400000052+	2200000052+	2200000052+	4180000053+	2160002248+	4421382251+	2727272750+	5880438650+	1963638447+	5282349851+
1400000052+	2300000052+	2300000052+	4485000053+	2160002248+	4396242451+	2608695750+	6000870950+	1878262847+	5257386951+
1400000052+	2400000052+	2400000052+	4800000053+	2160002248+	4372379451+	2500000050+	6121331350+	1800001847+	5234692551+
1400000052+	2500000052+	2500000052+	5125000053+	2160002248+	4349682051+	2400000050+	6241793650+	1728001847+	5214034251+
1400000052+	2600000052+	2600000052+	5460000053+	2160002248+	4328052551+	2307692350+	6362237350+	1661540247+	5195211651+
1400000052+	2700000052+	2700000052+	5805000053+	2160002248+	4307404851+	2222222250+	6482644450+	1600001647+	5178051451+
1400000052+	2800000052+	2800000052+	6160000053+	2160002248+	4287662251+	2142857150+	6602999650+	1542858747+	5162402251+
1400000052+	2900000052+	2900000052+	6525000053+	2160002248+	4268756451+	2068965550+	6723291450+	1489656747+	5148131151+
1400000052+	3000000052+	3000000052+	6900000053+	2160002248+	4250626351+	2000000050+	6843508350+	1440001547+	5135121151+
1400000052+	3100000052+	3100000052+	7285000053+	2160002248+	4233217251+	1935483950+	6963642350+	1393549847+	5123269251+
1400000052+	3200000052+	3200000052+	7680000053+	2160002248+	4216479651+	1875000050+	7083685650+	1350001447+	5112483251+
1400000052+	3300000052+	3300000052+	8085000053+	2160002248+	4200368751+	1818181850+	7203632450+	1309092247+	5102681051+
1400000052+	3400000052+	3400000052+	8500000053+	2160002248+	4184844251+	1764705950+	7323477450+	1270589547+	5093789651+
1400000052+	3500000052+	3500000052+	8925000053+	2160002248+	4169869051+	1714285750+	7443216350+	1234287047+	5085742651+
1400000052+	3600000052+	3600000052+	9360000053+	2160002248+	4155409751+	1666666750+	7562845850+	1200001247+	5078481051+
1400000052+	3700000052+	3700000052+	9805000053+	2160002248+	4141435451+	1621621650+	7682362750+	1167568847+	5071950751+
1400000052+	3800000052+	3800000052+	1026000054+	2160002248+	4127918051+	1578947450+	7801765050+	1136843347+	5066102951+
1400000052+	3900000052+	3900000052+	1072500054+	2160002248+	4114831651+	1538461550+	7921050850+	1107693447+	5060893751+
1400000052+	4000000052+	4000000052+	1120000054+	2160002248+	4102152551+	1500000050+	8040219050+	1080001147+	5056282451+
1400000052+	4100000052+	4100000052+	1168500054+	2160002248+	4089858651+	1463414650+	8159268050+	1053659647+	5052232351+
1400000052+	4200000052+	4200000052+	1218000054+	2160002248+	4077929851+	1428571450+	8278197650+	1028572547+	5048709651+
1400000052+	4300000052+	4300000052+	1268500054+	2160002248+	4066347151+	1395348850+	8397006750+	1004652247+	5045683251+
1400000052+	4400000052+	4400000052+	1320000054+	2160002248+	4055093151+	1363636450+	8515695550+	9818191846+	5043124551+
1400000052+	4500000052+	4500000052+	1372500054+	2160002248+	4044151851+	1333333350+	8634264050+	9600009846+	5041007551+
1400000052+	4600000052+	4600000052+	1426000054+	2160002248+	4033507951+	1304347850+	8752712250+	9391313946+	5039307851+
1400000052+	4700000052+	4700000052+	1480500054+	2160002248+	4023147551+	1276595750+	8871040250+	9191498746+	5038003051+
1400000052+	4800000052+	4800000052+	1536000054+	2160002248+	4013057451+	1250000050+	8989248550+	9000009246+	5037072351+
1400000052+	4900000052+	4900000052+	1592500054+	2160002248+	4003225451+	1224489850+	9107337850+	8816335546+	5036496451+
1400000052+	5000000052+	5000000052+	1650000054+	2160002248+	3993640051+	1200000050+	9225308450+	8640008846+	5036257251+
1400000052+	5100000052+	5100000052+	1708500054+	2160002248+	3984290551+	1176470650+	9343161250+	8470596946+	5036338451+
1500000052+	1000000051+	1000000051+	9500000051+	7610007647+	6360000051+	6000000051+	4229400050+	1522001548+	1278446252+
1500000052+	2000000051+	2000000051+	2000000052+	7610007647+	5964000051+	3000000051+	4174800050+	7610007547+	9382241051+
1500000052+	3000000051+	3000000051+	3150000052+	7610007647+	5702777051+	2000000051+	4191541350+	5073338347+	8122438451+
1500000052+	4000000051+	4000000051+	4400000052+	7610007647+	5510682851+	1500000051+	4243225850+	3805003847+	7435385951+
1500000052+	5000000051+	5000000051+	5750000052+	7610007647+	5360291051+	1200000051+	4315034250+	3044003047+	6992098851+
1500000052+	6000000051+	6000000051+	7200000052+	7610007647+	5237620051+	1000000051+	4399600850+	2536669247+	6677833851+
1500000052+	7000000051+	7000000051+	8750000052+	7610007647+	5134614251+	8571428650+	4492787450+	2174287947+	6441253251+
1500000052+	8000000051+	8000000051+	1040000053+	7610007647+	5046227451+	7500000050+	4592067050+	1902501947+	6255624451+
1500000052+	9000000051+	9000000051+	1215000053+	7610007647+	4969100051+	6666666750+	4695799650+	1691112847+	6105515851+
1500000052+	1000000052+	1000000052+	1400000053+	7610007647+	4900887851+	6000000050+	4802870050+	1522001547+	5981327051+
1500000052+	1100000052+	1100000052+	1595000053+	7610007647+	4839894451+	5454545550+	4912492850+	1383637747+	5876736751+
1500000052+	1200000052+	1200000052+	1800000053+	7610007647+	4784854251+	5000000050+	5024096950+	1268334647+	5787390751+
1500000052+	1300000052+	1300000052+	2015000053+	7610007647+	4734799851+	4615384650+	5137257850+	1170770447+	5710181251+
1500000052+	1400000052+	1400000052+	2240000053+	7610007647+	4688975851+	4285714350+	5251653050+	1087143947+	5642821251+
1500000052+	1500000052+	1500000052+	2475000053+	7610007647+	4646782051+	4000000050+	5367033050+	1014667747+	5583586851+
1500000052+	1600000052+	1600000052+	2720000053+	7610007647+	4607734251+	3750000050+	5483203750+	9512509446+	5531149751+
1500000052+	1700000052+	1700000052+	2975000053+	7610007647+	4571436051+	3529411850+	5600009150+	8952950046+	5484467651+
1500000052+	1800000052+	1800000052+	3240000053+	7610007647+	4537559851+	3333333350+	5717325650+	8455563946+	5442710351+
1500000052+	1900000052+	1900000052+	3515000053+	7610007647+	4505831451+	3157894750+	5835051650+	8010534246+	5405206251+
1500000052+	2000000052+	2000000052+	3800000053+	7610007647+	4476019051+	3000000050+	5953105050+	7610007546+	5371405651+
1500000052+	2100000052+	2100000052+	4095000053+	7610007647+	4447925651+	2857142950+	6071418650+	7247626246+	5340854351+
1500000052+	2200000052+	2200000052+	4400000053+	7610007647+	4421382251+	2727272750+	6189935050+	6918188646+	5313172251+
1500000052+	2300000052+	2300000052+	4715000053+	7610007647+	4396242451+	2608695750+	6308607850+	6617397846+	5288039051+
1500000052+	2400000052+	2400000052+	5040000053+	7610007647+	4372379451+	2500000050+	6427397550+	6341672946+	5265182651+
1500000052+	2500000052+	2500000052+	5375000053+	7610007647+	4349682051+	2400000050+	6546271650+	6088006046+	5244370151+
1500000052+	2600000052+	2600000052+	5720000053+	7610007647+	4328052551+	2307692350+	6665200850+	5853851946+	5225400351+
1500000052+	2700000052+	2700000052+	6075000053+	7610007647+	4307404851+	2222222250+	6784162650+	5637042646+	5208099751+
1500000052+	2800000052+	2800000052+	6440000053+	7610007647+	4287662251+	2142857150+	6903136450+	5435719646+	5192315951+
1500000052+	2900000052+	2900000052+	6815000053+	7610007647+	4268756451+	2068965550+	7022104550+	5248281046+	5177916051+
1500000052+	3000000052+	3000000052+	7200000053+	7610007647+	4250626381+	2000000050+	7141052050+	5073338346+	5164782251+
1500000052+	3100000052+	3100000052+	7595000053+	7610007647+	4233217251+	1935483950+	7259967750+	4909682346+	5152811551+
1500000052+	3200000052+	3200000052+	8000000053+	7610007647+	4216479651+	1875000050+	7378839450+	4756254746+	5141911151+
1500000052+	3300000052+	3300000052+	8415000053+	7610007647+	4200368751+	1818181850+	7497658250+	4612125846+	5131998851+
1500000052+	3400000052+	3400000052+	8840000053+	7610007647+	4184844251+	1764705950+	7616416550+	4476475046+	5123001351+
1500000052+	3500000052+	3500000052+	9275000053+	7610007647+	4169869051+	1714285750+	7735107150+	4348575746+	5114851851+
1500000052+	3600000052+	3600000052+	9720000053+	7610007647+	4155409751+	1666666750+	7853724250+	4227781946+	5107491151+
1500000052+	3700000052+	3700000052+	1017500054+	7610007647+	4141435451+	1621621650+	7972263250+	4113517646+	5100865051+
1500000052+	3800000052+	3800000052+	1064000054+	7610007647+	4127918051+	1578947450+	8090719550+	4005267146+	5094924851+
1500000052+	3900000052+	3900000052+	1111500054+	7610007647+	4114831651+	1538461550+	8209089050+	3902567946+	5089625751+
1500000052+	4000000052+	4000000052+	1160000054+	7610007647+	4102152551+	1500000050+	8327369550+	3805003846+	5084927651+
1500000052+	4100000052+	4100000052+	1209500054+	7610007647+	4089858651+	1463414650+	8445558050+	3712198846+	5080793051+
1500000052+	4200000052+	4200000052+	1260000054+	7610007647+	4077929851+	1428571450+	8563652650+	3623813146+	5077188451+
1500000052+	4300000052+	4300000052+	1311500054+	7610007647+	4066347151+	1395348850+	8681650950+	3539538446+	5074082551+
1500000052+	4400000052+	4400000052+	1364000054+	7610007647+	4055093151+	1363636450+	8799552050+	3459094346+	5071446551+
1500000052+	4500000052+	4500000052+	1417500054+	7610007647+	4044151851+	1333333350+	8917354750+	3382225646+	5069254451+
1500000052+	4600000052+	4600000052+	1472000054+	7610007647+	4033507951+	1304347850+	9035057650+	3308698946+	5067481651+
1500000052+	4700000052+	4700000052+	1527500054+	7610007647+	4023147551+	1276595750+	9152660650+	3238301146+	5066105651+
1500000052+	4800000052+	4800000052+	1584000054+	7610007647+	4013057451+	1250000050+	9270162550+	3170836546+	5065105451+
1500000052+	4900000052+	4900000052+	1641500054+	7610007647+	4003225451+	1224489850+	9387563750+	3106125546+	5064461951+
1500000052+	5000000052+	5000000052+	1700000054+	7610007647+	3993640051+	1200000050+	9504863250+	3044003046+	5064156751+
1500000052+	5100000052+	5100000052+	1759500054+	7610007647+	3984290551+	1176470650+	9622061650+	2984316746+	5064173651+
1600000052+	1000000051+	1000000051+	1050000052+	2530002547+	6360000051+	6000000051+	4674600050+	5060005047+	1282796652+

```
1600000052+ 2000000051+ 2000000051+ 2200000052+ 2530002547+ 5964000051+ 3000000051+ 4592280050+ 2530002547+ 9423481051+
1600000052+ 3000000051+ 3000000051+ 3450000052+ 2530002547+ 5702777051+ 2000000051+ 4590735750+ 1686668347+ 8162019351+
1600000052+ 4000000051+ 4000000051+ 4800000052+ 2530002547+ 5510682851+ 1500000051+ 4628973550+ 1265001347+ 7473706751+
1600000052+ 5000000051+ 5000000051+ 6250000052+ 2530002547+ 5360291051+ 1200000051+ 4690254650+ 1012001047+ 7029417751+
1600000052+ 6000000051+ 6000000051+ 7800000052+ 2530002547+ 5237620051+ 1000000051+ 4766234250+ 8433341746+ 6714327751+
1600000052+ 7000000051+ 7000000051+ 9450000052+ 2530002547+ 5134614251+ 8571428650+ 4852210450+ 7228578646+ 6477050451+
1600000052+ 8000000051+ 8000000051+ 1120000053+ 2530002547+ 5046227451+ 7500000050+ 4945302950+ 6325006346+ 6290821051+
1600000052+ 9000000051+ 9000000051+ 1305000053+ 2530002547+ 4969100051+ 6666666750+ 5043636650+ 5622227846+ 6140186651+
1600000052+ 1000000052+ 1000000052+ 1500000053+ 2530002547+ 4900887851+ 6000000050+ 5145932250+ 5060050046+ 6015531651+
1600000052+ 1100000052+ 1100000052+ 1705000053+ 2530002547+ 4839894451+ 5454545550+ 5251285550+ 4600004546+ 5910523651+
1600000052+ 1200000052+ 1200000052+ 1920000053+ 2530002547+ 4784854251+ 5000000050+ 5359036850+ 4216670846+ 5820800151+
1600000052+ 1300000052+ 1300000052+ 2145000053+ 2530002547+ 4734799851+ 4615384650+ 5468694050+ 3892311546+ 5743246651+
1600000052+ 1400000052+ 1400000052+ 2380000053+ 2530002547+ 4688975851+ 4285714350+ 5579881050+ 3614289346+ 5675571451+
1600000052+ 1500000052+ 1500000052+ 2625000053+ 2530002547+ 4646782051+ 4000000050+ 5692308150+ 3373336746+ 5616046551+
1600000052+ 1600000052+ 1600000052+ 2880000053+ 2530002547+ 4607734251+ 3750000050+ 5805744950+ 3162503146+ 5563340351+
1600000052+ 1700000052+ 1700000052+ 3145000053+ 2530002547+ 4571436051+ 3529411850+ 5920009450+ 2976473546+ 5516407951+
1600000052+ 1800000052+ 1800000052+ 3420000053+ 2530002547+ 4537559851+ 3333333350+ 6034955050+ 2811113946+ 5474416751+
1600000052+ 1900000052+ 1900000052+ 3705000053+ 2530002547+ 4505831451+ 3157894750+ 6150460050+ 2663160546+ 5436693551+
1600000052+ 2000000052+ 2000000052+ 4000000053+ 2530002547+ 4476019051+ 3000000050+ 6266426550+ 2530002546+ 5402687051+
1600000052+ 2100000052+ 2100000052+ 4305000053+ 2530002547+ 4447925651+ 2857142950+ 6382773350+ 2409526246+ 5371941351+
1600000052+ 2200000052+ 2200000052+ 4620000053+ 2530002547+ 4421382251+ 2727272750+ 6499431850+ 2300002346+ 5344075751+
1600000052+ 2300000052+ 2300000052+ 4945000053+ 2530002547+ 4396242451+ 2608695750+ 6616344850+ 2200002246+ 5318768551+
1600000052+ 2400000052+ 2400000052+ 5280000053+ 2530002547+ 4372379451+ 2500000050+ 6733464250+ 2108335446+ 5295746951+
1600000052+ 2500000052+ 2500000052+ 5625000053+ 2530002547+ 4349682051+ 2400000050+ 6850749250+ 2024002046+ 5274777151+
1600000052+ 2600000052+ 2600000052+ 5980000053+ 2530002547+ 4328052551+ 2307692350+ 6968164650+ 1946155846+ 5255657751+
1600000052+ 2700000052+ 2700000052+ 6345000053+ 2530002547+ 4307404851+ 2222222250+ 7085680750+ 1874075946+ 5238213851+
1600000052+ 2800000052+ 2800000052+ 6720000053+ 2530002547+ 4287662251+ 2142857150+ 7203272550+ 1807144646+ 5222293351+
1600000052+ 2900000052+ 2900000052+ 7105000053+ 2530002547+ 4268756451+ 2068965550+ 7320917250+ 1744829346+ 5207762151+
1600000052+ 3000000052+ 3000000052+ 7500000053+ 2530002547+ 4250626351+ 2000000050+ 7438596050+ 1686668346+ 5194502851+
1600000052+ 3100000052+ 3100000052+ 7905000053+ 2530002547+ 4233217251+ 1935483950+ 7556292650+ 1632259746+ 5182411251+
1600000052+ 3200000052+ 3200000052+ 8320000053+ 2530002547+ 4216479651+ 1875000050+ 7673992850+ 1581251646+ 5171394751+
1600000052+ 3300000052+ 3300000052+ 8745000053+ 2530002547+ 4200368751+ 1818181850+ 7791683950+ 1533334846+ 5161370651+
1600000052+ 3400000052+ 3400000052+ 9180000053+ 2530002547+ 4184844251+ 1764705950+ 7909355650+ 1488236846+ 5152265351+
1600000052+ 3500000052+ 3500000052+ 9625000053+ 2530002547+ 4169869051+ 1714285750+ 8026997750+ 1445715746+ 5144011951+
1600000052+ 3600000052+ 3600000052+ 1008000054+ 2530002547+ 4155409751+ 1666666750+ 8144603150+ 1405569646+ 5136550851+
1600000052+ 3700000052+ 3700000052+ 1054500054+ 2530002547+ 4141435451+ 1621621650+ 8262163550+ 1367568946+ 5129827751+
1600000052+ 3800000052+ 3800000052+ 1102000054+ 2530002547+ 4127918051+ 1578947450+ 8379673450+ 1331580346+ 5123793351+
1600000052+ 3900000052+ 3900000052+ 1150500054+ 2530002547+ 4114831651+ 1538461550+ 8497127450+ 1297437246+ 5118403551+
1600000052+ 4000000052+ 4000000052+ 1200000054+ 2530002547+ 4102152551+ 1500000050+ 8614520350+ 1265001346+ 5113617251+
1600000052+ 4100000052+ 4100000052+ 1250500054+ 2530002547+ 4089858651+ 1463414650+ 8731848050+ 1234147646+ 5109397251+
1600000052+ 4200000052+ 4200000052+ 1302000054+ 2530002547+ 4077929851+ 1428571450+ 8849107650+ 1204763146+ 5105709751+
1600000052+ 4300000052+ 4300000052+ 1354500054+ 2530002547+ 4066347151+ 1395348850+ 8966295350+ 1176745346+ 5102523351+
1600000052+ 4400000052+ 4400000052+ 1408000054+ 2530002547+ 4055093151+ 1363636450+ 9083408650+ 1150001146+ 5099809151+
1600000052+ 4500000052+ 4500000052+ 1462500054+ 2530002547+ 4044151851+ 1333333350+ 9200445350+ 1124445646+ 5097540851+
1600000052+ 4600000052+ 4600000052+ 1518000054+ 2530002547+ 4033507951+ 1304347850+ 9317403350+ 1100001146+ 5095694051+
1600000052+ 4700000052+ 4700000052+ 1574500054+ 2530002547+ 4023147551+ 1276595750+ 9434280950+ 1076596846+ 5094246051+
1600000052+ 4800000052+ 4800000052+ 1632000054+ 2530002547+ 4013057451+ 1250000050+ 9551076750+ 1054167746+ 5093175651+
1600000052+ 4900000052+ 4900000052+ 1690500054+ 2530002547+ 4003225451+ 1224489850+ 9667789450+ 1032654146+ 5092463651+
1600000052+ 5000000052+ 5000000052+ 1750000054+ 2530002547+ 3993640051+ 1200000050+ 9784418050+ 1012001046+ 5092091951+
1600000052+ 5100000052+ 5100000052+ 1810500054+ 2530002547+ 3984290551+ 1176470650+ 9900962050+ 9921578445+ 5092043751+
1600000052+ 5200000052+ 5200000052+ 1872000054+ 2530002547+ 3975166751+ 1153846250+ 1001742051+ 9730778845+ 5092303051+
1700000052+ 1000000051+ 1000000051+ 1150000052+ 7900007946+ 6360000051+ 6000000051+ 5119800050+ 1580001647+ 1287213852+
1700000052+ 2000000051+ 2000000051+ 2400000052+ 7900007946+ 5964000051+ 3000000051+ 5009760050+ 7900008046+ 9465055051+
1700000052+ 3000000051+ 3000000051+ 3750000052+ 7900007946+ 5702777051+ 2000000051+ 4989930050+ 5266672046+ 8201822751+
1700000052+ 4000000051+ 4000000051+ 5200000052+ 7900007946+ 5510682851+ 1500000051+ 5014721550+ 3950004046+ 7512194551+
1700000052+ 5000000051+ 5000000051+ 6750000052+ 7900007946+ 5360291051+ 1200000051+ 5065475050+ 3160003246+ 7066870151+
1700000052+ 6000000051+ 6000000051+ 8400000052+ 7900007946+ 5237620051+ 1000000051+ 5132867750+ 2633336046+ 6750933151+
1700000052+ 7000000051+ 7000000051+ 1015000053+ 7900007946+ 5134614251+ 8571428650+ 5211633450+ 2257145146+ 6512943051+
1700000052+ 8000000051+ 8000000051+ 1200000053+ 7900007946+ 5046227451+ 7500000050+ 5298538850+ 1975002046+ 6326101151+
1700000052+ 9000000051+ 9000000051+ 1395000053+ 7900007946+ 4969100051+ 6666666750+ 5391473650+ 1755557346+ 6174931751+
1700000052+ 1000000052+ 1000000052+ 1600000053+ 7900007946+ 4900887851+ 6000000050+ 5488994450+ 1580001646+ 6049803051+
1700000052+ 1100000052+ 1100000052+ 1815000053+ 7900007946+ 4839894451+ 5454545550+ 5590078050+ 1436365146+ 5944371251+
1700000052+ 1200000052+ 1200000052+ 2040000053+ 7900007946+ 4784854251+ 5000000050+ 5693976550+ 1316668046+ 5854265151+
1700000052+ 1300000052+ 1300000052+ 2275000053+ 7900007946+ 4734799851+ 4615384650+ 5800130050+ 1215385846+ 5776363551+
1700000052+ 1400000052+ 1400000052+ 2520000053+ 7900007946+ 4688975851+ 4285714350+ 5908109550+ 1128572646+ 5708369551+
1700000052+ 1500000052+ 1500000052+ 2775000053+ 7900007946+ 4646782051+ 4000000050+ 6017582750+ 1053334446+ 5648550851+
1700000052+ 1600000052+ 1600000052+ 3040000053+ 7900007946+ 4607734251+ 3750000050+ 6128286550+ 9875010045+ 5595572851+
1700000052+ 1700000052+ 1700000052+ 3315000053+ 7900007946+ 4571436051+ 3529411850+ 6240010050+ 9294127145+ 5548387551+
1700000052+ 1800000052+ 1800000052+ 3600000053+ 7900007946+ 4537559851+ 3333333350+ 6352583950+ 8777786745+ 5506160351+
1700000052+ 1900000052+ 1900000052+ 3895000053+ 7900007946+ 4505831451+ 3157894750+ 6465867950+ 8315797945+ 5468216051+
1700000052+ 2000000052+ 2000000052+ 4200000053+ 7900007946+ 4476019051+ 3000000050+ 6579748050+ 7900008045+ 5434001751+
1700000052+ 2100000052+ 2100000052+ 4515000053+ 7900007946+ 4447925651+ 2857142950+ 6694128150+ 7523817145+ 5403060251+
1700000052+ 2200000052+ 2200000052+ 4840000053+ 7900007946+ 4421382251+ 2727272750+ 6808928650+ 7181825545+ 5375007651+
1700000052+ 2300000052+ 2300000052+ 5175000053+ 7900007946+ 4396242451+ 2608695750+ 6924081750+ 6869572245+ 5349527151+
1700000052+ 2400000052+ 2400000052+ 5520000053+ 7900007946+ 4372379451+ 2500000050+ 7039530850+ 6583340045+ 5326339151+
1700000052+ 2500000052+ 2500000052+ 5875000053+ 7900007946+ 4349682051+ 2400000050+ 7155226850+ 6320006445+ 5305211051+
1700000052+ 2600000052+ 2600000052+ 6240000053+ 7900007946+ 4328052551+ 2307692350+ 7271128550+ 6076929245+ 5285940751+
1700000052+ 2700000052+ 2700000052+ 6615000053+ 7900007946+ 4307404851+ 2222222250+ 7387199350+ 5851857845+ 5268352851+
1700000052+ 2800000052+ 2800000052+ 7000000053+ 7900007946+ 4287662251+ 2142857150+ 7503408950+ 5642862945+ 5252294451+
1700000052+ 2900000052+ 2900000052+ 7395000053+ 7900007946+ 4268756451+ 2068965550+ 7619730350+ 5448281445+ 5237631451+
1700000052+ 3000000052+ 3000000052+ 7800000053+ 7900007946+ 4250626351+ 2000000050+ 7736140050+ 5266672045+ 5224245651+
1700000052+ 3100000052+ 3100000052+ 8215000053+ 7900007946+ 4233217251+ 1935483950+ 7852617750+ 5096779445+ 5212032551+
1700000052+ 3200000052+ 3200000052+ 8640000053+ 7900007946+ 4216479651+ 1875000050+ 7969146650+ 4937505045+ 5200899251+
1700000052+ 3300000052+ 3300000052+ 9075000053+ 7900007946+ 4200368751+ 1818181850+ 8085709750+ 4787883645+ 5190762751+
1700000052+ 3400000052+ 3400000052+ 9520000053+ 7900007946+ 4184844251+ 1764705950+ 8202294750+ 4647063545+ 5181548951+
1700000052+ 3500000052+ 3500000052+ 9975000053+ 7900007946+ 4169869051+ 1714285750+ 8318888650+ 4514290345+ 5173191051+
1700000052+ 3600000052+ 3600000052+ 1044000054+ 7900007946+ 4155409751+ 1666666750+ 8435481750+ 4388893345+ 5165629051+
1700000052+ 3700000052+ 3700000052+ 1091500054+ 7900007946+ 4141435451+ 1621621650+ 8552064150+ 4270274645+ 5158808351+
1700000052+ 3800000052+ 3800000052+ 1140000054+ 7900007946+ 4127918051+ 1578947450+ 8668627950+ 4157898945+ 5152679751+
1700000052+ 3900000052+ 3900000052+ 1189500054+ 7900007946+ 4114831651+ 1538461550+ 8785165450+ 4051286245+ 5147198451+
1700000052+ 4000000052+ 4000000052+ 1240000054+ 7900007946+ 4102152551+ 1500000050+ 8901671050+ 3950004045+ 5142323651+
1700000052+ 4100000052+ 4100000052+ 1291500054+ 7900007946+ 4089858651+ 1463414650+ 9018138350+ 3853662445+ 5138017851+
1700000052+ 4200000052+ 4200000052+ 1344000054+ 7900007946+ 4077929851+ 1428571450+ 9134562950+ 3761908645+ 5134247051+
1700000052+ 4300000052+ 4300000052+ 1397500054+ 7900007946+ 4066347151+ 1395348850+ 9250939850+ 3674422345+ 5130979751+
1700000052+ 4400000052+ 4400000052+ 1452000054+ 7900007946+ 4055093151+ 1363636450+ 9367265050+ 3590912745+ 5128186851+
1700000052+ 4500000052+ 4500000052+ 1507500054+ 7900007946+ 4044151851+ 1333333350+ 9483536050+ 3511114745+ 5125842251+
1700000052+ 4600000052+ 4600000052+ 1564000054+ 7900007946+ 4033507951+ 1304347850+ 9599748950+ 3434786145+ 5123921051+
1700000052+ 4700000052+ 4700000052+ 1621500054+ 7900007946+ 4023147551+ 1276595750+ 9715901350+ 3361705545+ 5122400651+
1700000052+ 4800000052+ 4800000052+ 1680000054+ 7900007946+ 4013057451+ 1250000050+ 9831990650+ 3291670045+ 5121259851+
1700000052+ 4900000052+ 4900000052+ 1739500054+ 7900007946+ 4003225451+ 1224489850+ 9948015150+ 3224493145+ 5120479151+
1700000052+ 5000000052+ 5000000052+ 1800000054+ 7900007946+ 3993640051+ 1200000050+ 1006397351+ 3160003245+ 5120040551+
1700000052+ 5100000052+ 5100000052+ 1861500054+ 7900007946+ 3984290551+ 1176470650+ 1017986251+ 3098042445+ 5119926951+
1700000052+ 5200000052+ 5200000052+ 1924000054+ 7900007946+ 3975166751+ 1153846250+ 1029568251+ 3038464645+ 5120122551+
1800000052+ 1000000051+ 1000000051+ 1250000052+ 2300002346+ 6360000051+ 6000000051+ 5565000050+ 4600004646+ 1291654652+
1800000052+ 2000000051+ 2000000051+ 2600000052+ 2300002346+ 5964000051+ 3000000051+ 5427240050+ 2300002346+ 9506747051+
1800000052+ 3000000051+ 3000000051+ 4050000052+ 2300002346+ 5702777051+ 2000000051+ 5389124350+ 1533334946+ 8241704751+
1800000052+ 4000000051+ 4000000051+ 5600000052+ 2300002346+ 5510682851+ 1500000051+ 5400469350+ 1150001246+ 7550741251+
1800000052+ 5000000051+ 5000000051+ 7250000052+ 2300002346+ 5360291051+ 1200000051+ 5440695450+ 9200009245+ 7104369751+
```

1800000052+	6000000051+	6000000051+	9000000052+	2300002346+	5237620051+	1000000051+	5499501050+	7666674345+	6787577851+
1800000052+	7000000051+	7000000051+	10850000053+	2300002346+	5134614251+	8571428650+	5571056450+	6571435145+	6548869351+
1800000052+	8000000051+	8000000051+	12800000053+	2300002346+	5046227451+	7500000050+	5651774850+	5750005845+	6361410751+
1800000052+	9000000051+	9000000051+	14850000053+	2300002346+	4969100051+	6666666750+	5739310650+	5111116245+	6209702951+
1800000052+	1000000052+	1000000052+	17000000053+	2300002346+	4900887851+	6000000050+	5832056550+	4600004645+	6084098151+
1800000052+	1100000052+	1100000052+	19250000053+	2300002346+	4839894451+	5454545550+	5928870650+	4181822445+	5978240351+
1800000052+	1200000052+	1200000052+	21600000053+	2300002346+	4784854251+	5000000050+	6028916350+	3833337245+	5887749651+
1800000052+	1300000052+	1300000052+	24050000053+	2300002346+	4734799851+	4615384650+	6131566050+	3538465145+	5809498451+
1800000052+	1400000052+	1400000052+	26600000053+	2300002346+	4688975851+	4285714350+	6236338050+	3285717645+	5741184351+
1800000052+	1500000052+	1500000052+	29250000053+	2300002346+	4646782051+	4000000050+	6342857350+	3066669745+	5681070851+
1800000052+	1600000052+	1600000052+	32000000053+	2300002346+	4607734251+	3750000050+	6450827550+	2875002945+	5627819951+
1800000052+	1700000052+	1700000052+	34850000053+	2300002346+	4571436051+	3529411850+	6560010650+	2705885145+	5580381051+
1800000052+	1800000052+	1800000052+	37800000053+	2300002346+	4537559851+	3333333350+	6670212850+	2555558145+	5537917051+
1800000052+	1900000052+	1900000052+	40850000053+	2300002346+	4505831451+	3157894750+	6781276350+	2421055145+	5499750951+
1800000052+	2000000052+	2000000052+	44000000053+	2300002346+	4476019051+	3000000050+	6893069550+	2300002345+	5465328351+
1800000052+	2100000052+	2100000052+	47250000053+	2300002346+	4447925651+	2857142950+	7005482950+	2190478445+	5434190451+
1800000052+	2200000052+	2200000052+	50600000053+	2300002346+	4421382251+	2727272750+	7118425550+	2090911245+	5405954251+
1800000052+	2300000052+	2300000052+	54050000053+	2300002346+	4396242451+	2608695750+	7231818750+	2000002045+	5380295951+
1800000052+	2400000052+	2400000052+	57600000053+	2300002346+	4372379451+	2500000050+	7345597550+	1916668645+	5356941151+
1800000052+	2500000052+	2500000052+	61250000053+	2300002346+	4349682051+	2400000050+	7459704450+	1840001845+	5335654251+
1800000052+	2600000052+	2600000052+	65000000053+	2300002346+	4328052551+	2307692350+	7574091950+	1769232545+	5316232751+
1800000052+	2700000052+	2700000052+	68850000053+	2300002346+	4307404851+	2222222250+	7688717450+	1703705445+	5298500451+
1800000052+	2800000052+	2800000052+	72800000053+	2300002346+	4287662251+	2142857150+	7803545450+	1642858845+	5282304051+
1800000052+	2900000052+	2900000052+	76850000053+	2300002346+	4268756451+	2068965550+	7918543150+	1586208545+	5267508951+
1800000052+	3000000052+	3000000052+	81000000053+	2300002346+	4250626351+	2000000050+	8033683750+	1533334945+	5253996251+
1800000052+	3100000052+	3100000052+	85250000053+	2300002346+	4233217251+	1935483950+	8148943250+	1483872545+	5241661451+
1800000052+	3200000052+	3200000052+	89600000053+	2300002346+	4216479651+	1875000050+	8264300050+	1437501445+	5230411051+
1800000052+	3300000052+	3300000052+	94050000053+	2300002346+	4200368751+	1818181850+	8379735850+	1393940845+	5220161951+
1800000052+	3400000052+	3400000052+	98600000053+	2300002346+	4184844251+	1764705950+	8495233850+	1352942545+	5210839651+
1800000052+	3500000052+	3500000052+	10325000054+	2300002346+	4169869051+	1714285750+	8610779450+	1314287045+	5202376851+
1800000052+	3600000052+	3600000052+	10800000054+	2300002346+	4155409751+	1666666750+	8726360650+	1277779145+	5194713851+
1800000052+	3700000052+	3700000052+	11285000054+	2300002346+	4141435451+	1621621650+	8841964650+	1243244545+	5187795351+
1800000052+	3800000052+	3800000052+	11780000054+	2300002346+	4127918051+	1578947450+	8957582150+	1210527545+	5181572151+
1800000052+	3900000052+	3900000052+	12285000054+	2300002346+	4114831651+	1538461550+	9073203650+	1179488445+	5175999451+
1800000052+	4000000052+	4000000052+	12800000054+	2300002346+	4102152551+	1500000050+	9188821550+	1150001245+	5171035951+
1800000052+	4100000052+	4100000052+	13325000054+	2300002346+	4089858651+	1463414650+	9304428350+	1121952345+	5166644051+
1800000052+	4200000052+	4200000052+	13860000054+	2300002346+	4077929851+	1428571450+	9420017950+	1095239245+	5162789851+
1800000052+	4300000052+	4300000052+	14405000054+	2300002346+	4066347151+	1395348850+	9535584050+	1069768545+	5159441551+
1800000052+	4400000052+	4400000052+	14960000054+	2300002346+	4055093151+	1363636450+	9651121650+	1045455645+	5156569951+
1800000052+	4500000052+	4500000052+	15525000054+	2300002346+	4044151851+	1333333350+	9766626750+	1022223245+	5154148851+
1800000052+	4600000052+	4600000052+	16100000054+	2300002346+	4033507951+	1304347850+	9882094350+	1000001045+	5152153151+
1800000052+	4700000052+	4700000052+	16685000054+	2300002346+	4023147551+	1276595750+	9997521550+	9787243844+	5150560351+
1800000052+	4800000052+	4800000052+	17280000054+	2300002346+	4013057451+	1250000050+	1011290551+	9583342944+	5149348951+
1800000052+	4900000052+	4900000052+	17885000054+	2300002346+	4003225451+	1224489850+	1022824151+	9387764544+	5148499451+
1800000052+	5000000052+	5000000052+	18500000054+	2300002346+	3993640051+	1200000050+	1034352851+	9200009244+	5147993751+
1800000052+	5100000052+	5100000052+	19125000054+	2300002346+	3984290551+	1176470650+	1045876351+	9019616944+	5147814851+
1800000052+	5200000052+	5200000052+	19760000054+	2300002346+	3975166751+	1153846250+	1057394351+	8846162744+	5147946551+
1900000052+	1000000051+	1000000051+	13500000052+	6000006045+	6360000051+	6000000051+	6010200050+	1200001246+	1296103252+
1900000052+	2000000051+	2000000051+	28000000052+	6000006045+	5964000051+	3000000051+	5844720050+	6000006045+	9548478051+
1900000052+	3000000051+	3000000051+	43500000052+	6000006045+	5702777051+	2000000051+	5788318750+	4000004045+	8281612951+
1900000052+	4000000051+	4000000051+	60000000052+	6000006045+	5510682851+	1500000051+	5786217050+	3000003045+	7589307551+
1900000052+	5000000051+	5000000051+	77500000052+	6000006045+	5360291051+	1200000051+	5815915850+	2400002445+	7141885051+
1900000052+	6000000051+	6000000051+	96000000052+	6000006045+	5237620051+	1000000051+	5866134350+	2000002045+	6824235451+
1900000052+	7000000051+	7000000051+	11550000053+	6000006045+	5134614251+	8571428650+	5930479450+	1714287445+	6584806751+
1900000052+	8000000051+	8000000051+	13600000053+	6000006045+	5046227451+	7500000050+	6005010650+	1500001545+	6396730051+
1900000052+	9000000051+	9000000051+	15750000053+	6000006045+	4969100051+	6666666750+	6087147650+	1333334745+	6244482851+
1900000052+	1000000052+	1000000052+	18000000053+	6000006045+	4900887851+	6000000050+	6175118650+	1200001245+	6118400951+
1900000052+	1100000052+	1100000052+	20350000053+	6000006045+	4839894451+	5454545550+	6267663350+	1090910245+	6012116451+
1900000052+	1200000052+	1200000052+	22800000053+	6000006045+	4784854251+	5000000050+	6363856350+	1000001045+	5921240851+
1900000052+	1300000052+	1300000052+	25350000053+	6000006045+	4734799851+	4615384650+	6463001550+	9230778544+	5842639451+
1900000052+	1400000052+	1400000052+	28000000053+	6000006045+	4688975851+	4285714350+	6564566050+	8571437144+	5774004751+
1900000052+	1500000052+	1500000052+	30750000053+	6000006045+	4646782051+	4000000050+	6668132750+	8000008044+	5713596151+
1900000052+	1600000052+	1600000052+	33600000053+	6000006045+	4607734251+	3750000050+	6773369450+	7500007544+	5660071951+
1900000052+	1700000052+	1700000052+	36550000053+	6000006045+	4571436051+	3529411850+	6880011250+	7058830644+	5612379051+
1900000052+	1800000052+	1800000052+	39600000053+	6000006045+	4537559851+	3333333350+	6987842250+	6666673344+	5569678051+
1900000052+	1900000052+	1900000052+	42750000053+	6000006045+	4505831451+	3157894750+	7096684250+	6315795844+	5531289951+
1900000052+	2000000052+	2000000052+	46000000053+	6000006045+	4476019051+	3000000050+	7206390550+	6000006044+	5496658751+
1900000052+	2100000052+	2100000052+	49350000053+	6000006045+	4447925651+	2857142950+	7316837650+	5714291444+	5465324351+
1900000052+	2200000052+	2200000052+	52800000053+	6000006045+	4421382251+	2727272750+	7427922350+	5454550944+	5436902251+
1900000052+	2300000052+	2300000052+	56350000053+	6000006045+	4396242451+	2608695750+	7539555750+	5217396544+	5411068151+
1900000052+	2400000052+	2400000052+	60000000053+	6000006045+	4372379451+	2500000050+	7651663850+	5000005044+	5387546351+
1900000052+	2500000052+	2500000052+	63750000053+	6000006045+	4349682051+	2400000050+	7764182450+	4800004844+	5366100751+
1900000052+	2600000052+	2600000052+	67600000053+	6000006045+	4328052551+	2307692350+	7877055850+	4615389244+	5346527851+
1900000052+	2700000052+	2700000052+	71550000053+	6000006045+	4307404851+	2222222250+	7990235950+	4444448944+	5328651051+
1900000052+	2800000052+	2800000052+	75600000053+	6000006045+	4287662251+	2142857150+	8103681450+	4285718644+	5312316451+
1900000052+	2900000052+	2900000052+	79750000053+	6000006045+	4268756451+	2068965550+	8217355950+	4137935244+	5297389051+
1900000052+	3000000052+	3000000052+	84000000053+	6000006045+	4250626351+	2000000050+	8331227750+	4000004044+	5283749551+
1900000052+	3100000052+	3100000052+	88350000053+	6000006045+	4233217251+	1935483950+	8445268450+	3870971644+	5271292851+
1900000052+	3200000052+	3200000052+	92800000053+	6000006045+	4216479651+	1875000050+	8559453850+	3750003844+	5259925451+
1900000052+	3300000052+	3300000052+	97350000053+	6000006045+	4200368751+	1818181850+	8673761250+	3636367344+	5249563451+
1900000052+	3400000052+	3400000052+	10200000054+	6000006045+	4184844251+	1764705950+	8788172950+	3529415344+	5240132551+
1900000052+	3500000052+	3500000052+	10675000054+	6000006045+	4169869051+	1714285750+	8902670350+	3428574944+	5231564951+
1900000052+	3600000052+	3600000052+	11160000054+	6000006045+	4155409751+	1666666750+	9017238950+	3333336744+	5223800651+
1900000052+	3700000052+	3700000052+	11655000054+	6000006045+	4141435451+	1621621650+	9131865150+	3243246544+	5216784451+
1900000052+	3800000052+	3800000052+	12160000054+	6000006045+	4127918051+	1578947450+	9246536350+	3157897944+	5210466651+
1900000052+	3900000052+	3900000052+	12675000054+	6000006045+	4114831651+	1538461550+	9361242150+	3076926244+	5204802351+
1900000052+	4000000052+	4000000052+	13200000054+	6000006045+	4102152551+	1500000050+	9475972350+	3000003044+	5199750051+
1900000052+	4100000052+	4100000052+	13735000054+	6000006045+	4089858651+	1463414650+	9590718550+	2926832244+	5195272351+
1900000052+	4200000052+	4200000052+	14280000054+	6000006045+	4077929851+	1428571450+	9705473150+	2857145744+	5191334551+
1900000052+	4300000052+	4300000052+	14835000054+	6000006045+	4066347151+	1395348850+	9820228150+	2790700544+	5187905151+
1900000052+	4400000052+	4400000052+	15400000054+	6000006045+	4055093151+	1363636450+	9934978250+	2727275544+	5184954851+
1900000052+	4500000052+	4500000052+	15975000054+	6000006045+	4044151851+	1333333350+	1004971751+	2666669344+	5182457151+
1900000052+	4600000052+	4600000052+	16560000054+	6000006045+	4033507951+	1304347850+	1016446051+	2608698344+	5180387051+
1900000052+	4700000052+	4700000052+	17155000054+	6000006045+	4023147551+	1276595750+	1027914251+	2553194044+	5178721651+
1900000052+	4800000052+	4800000052+	17760000054+	6000006045+	4013057451+	1250000050+	1039381951+	2500002544+	5177439651+
1900000052+	4900000052+	4900000052+	18375000054+	6000006045+	4003225451+	1224489850+	1050846751+	2448982044+	5176521351+
1900000052+	5000000052+	5000000052+	19000000054+	6000006045+	3993640051+	1200000050+	1062308251+	2400002444+	5175941451+
1900000052+	5100000052+	5100000052+	19635000054+	6000006045+	3984290551+	1176470650+	1073766351+	2352943544+	5175704151+
1900000052+	5200000052+	5200000052+	20280000054+	6000006045+	3975166751+	1153846250+	1085220551+	2307696444+	5175772051+
2000000052+	1000000051+	1000000051+	14500000052+	1000001045+	6360000051+	6000000051+	6455400050+	2000002045+	1300554252+
2000000052+	2000000051+	2000000051+	30000000052+	1000001045+	5964000051+	3000000051+	6262200050+	1000001045+	9590221051+
2000000052+	3000000051+	3000000051+	46500000052+	1000001045+	5702777051+	2000000051+	6187513050+	6666673344+	8321529051+
2000000052+	4000000051+	4000000051+	64000000052+	1000001045+	5510682851+	1500000051+	6171964850+	5000005044+	7627879851+
2000000052+	5000000051+	5000000051+	82500000052+	1000001045+	5360291051+	1200000051+	6191136250+	4000004044+	7179405051+
2000000052+	6000000051+	6000000051+	10200000053+	1000001045+	5237620051+	1000000051+	6232767850+	3333336744+	6860897151+
2000000052+	7000000051+	7000000051+	12250000053+	1000001045+	5134614251+	8571428650+	6289902450+	2857145744+	6620747651+
2000000052+	8000000051+	8000000051+	14400000053+	1000001045+	5046227451+	7500000050+	6358246650+	2500002544+	6432052451+
2000000052+	9000000051+	9000000051+	16650000053+	1000001045+	4969100051+	6666666750+	6434984650+	2222224444+	6279265451+

2000000052+	1000000052+	1000000052+	1900000053+	1000001045+	4900887851+	6000000050+	6518180850+	2000002044+	6152706151+
2000000052+	1100000052+	1100000052+	2145000053+	1000001045+	4839894451+	5454545550+	6606455550+	1818183644+	6045994851+
2000000052+	1200000052+	1200000052+	2400000053+	1000001045+	4784854251+	5000000050+	6698795850+	1666668344+	5954734051+
2000000052+	1300000052+	1300000052+	2665000053+	1000001045+	4734799851+	4615384650+	6794437550+	1538463144+	5875781351+
2000000052+	1400000052+	1400000052+	2940000053+	1000001045+	4688975851+	4285714350+	6892794550+	1428572944+	5806826851+
2000000052+	1500000052+	1500000052+	3225000053+	1000001045+	4646782051+	4000000050+	6993406750+	1333334744+	5746122851+
2000000052+	1600000052+	1600000052+	3520000053+	1000001045+	4607734251+	3750000050+	7095910650+	1250001344+	5692325451+
2000000052+	1700000052+	1700000052+	3825000053+	1000001045+	4571436051+	3529411850+	7200011850+	1176471844+	5644378551+
2000000052+	1800000052+	1800000052+	4140000053+	1000001045+	4537559851+	3333333350+	7305471750+	1111112244+	5601440451+
2000000052+	1900000052+	1900000052+	4465000053+	1000001045+	4505831451+	3157894750+	7412092650+	1052632644+	5562830351+
2000000052+	2000000052+	2000000052+	4800000053+	1000001045+	4476019051+	3000000050+	7519712050+	1000001044+	5527990351+
2000000052+	2100000052+	2100000052+	5145000053+	1000001045+	4447925651+	2857142950+	7628192450+	9523819043+	5496459251+
2000000052+	2200000052+	2200000052+	5500000053+	1000001045+	4421382251+	2727272750+	7737418650+	9090918243+	5467851551+
2000000052+	2300000052+	2300000052+	5865000053+	1000001045+	4396242451+	2608695750+	7847292650+	8695660943+	5441841451+
2000000052+	2400000052+	2400000052+	6240000053+	1000001045+	4372379451+	2500000050+	7957730450+	8333341743+	5418152551+
2000000052+	2500000052+	2500000052+	6625000053+	1000001045+	4349682051+	2400000050+	8068660050+	8000008043+	5396548151+
2000000052+	2600000052+	2600000052+	7020000053+	1000001045+	4328052551+	2307692350+	8180019250+	7692315443+	5376823751+
2000000052+	2700000052+	2700000052+	7425000053+	1000001045+	4307404851+	2222222250+	8291754450+	7407414843+	5358802551+
2000000052+	2800000052+	2800000052+	7840000053+	1000001045+	4287662251+	2142857150+	8403817950+	7142864343+	5342329851+
2000000052+	2900000052+	2900000052+	8265000053+	1000001045+	4268756451+	2068965550+	8516169050+	6896558643+	5327270051+
2000000052+	3000000052+	3000000052+	8700000053+	1000001045+	4250626351+	2000000050+	8628771350+	6666673343+	5313503551+
2000000052+	3100000052+	3100000052+	9145000053+	1000001045+	4233217251+	1935483950+	8741593550+	6451619443+	5300925151+
2000000052+	3200000052+	3200000052+	9600000053+	1000001045+	4216479651+	1875000050+	8854607250+	6250006343+	5289440451+
2000000052+	3300000052+	3300000052+	10065000054+	1000001045+	4200368751+	1818181850+	8967787350+	6060612143+	5278965751+
2000000052+	3400000052+	3400000052+	10540000054+	1000001045+	4184844251+	1764705950+	9081112150+	5882358843+	5269426151+
2000000052+	3500000052+	3500000052+	11025000054+	1000001045+	4169869051+	1714285750+	9194561150+	5714291443+	5260753851+
2000000052+	3600000052+	3600000052+	11520000054+	1000001045+	4155409751+	1666666750+	9308117850+	5555561143+	5252888351+
2000000052+	3700000052+	3700000052+	12025000054+	1000001045+	4141435451+	1621621650+	9421765750+	5405410843+	5245774351+
2000000052+	3800000052+	3800000052+	12540000054+	1000001045+	4127918051+	1578947450+	9535490550+	5263163243+	5239361951+
2000000052+	3900000052+	3900000052+	13065000054+	1000001045+	4114831651+	1538461550+	9649280350+	5128210343+	5233605951+
2000000052+	4000000052+	4000000052+	13600000054+	1000001045+	4102152551+	1500000050+	9763123050+	5000005043+	5228464951+
2000000052+	4100000052+	4100000052+	14145000054+	1000001045+	4089858651+	1463414650+	9877008550+	4878053743+	5223901051+
2000000052+	4200000052+	4200000052+	14700000054+	1000001045+	4077929851+	1428571450+	9990928150+	4761909543+	5219879751+
2000000052+	4300000052+	4300000052+	15265000054+	1000001045+	4066347151+	1395348850+	10104873150+	4651167443+	5216369351+
2000000052+	4400000052+	4400000052+	15840000054+	1000001045+	4055093151+	1363636450+	10218835150+	4545459143+	5213340251+
2000000052+	4500000052+	4500000052+	16425000054+	1000001045+	4044151851+	1333333350+	10332808450+	4444448943+	5210765951+
2000000052+	4600000052+	4600000052+	17020000054+	1000001045+	4033507951+	1304347850+	10446785150+	4347830443+	5208621251+
2000000052+	4700000052+	4700000052+	17625000054+	1000001045+	4023147551+	1276595750+	10560762150+	4255323443+	5206883351+
2000000052+	4800000052+	4800000052+	18240000054+	1000001045+	4013057451+	1250000050+	10674733150+	4166670843+	5205530751+
2000000052+	4900000052+	4900000052+	18865000054+	1000001045+	4003225451+	1224489850+	10788692150+	4081636743+	5204543651+
2000000052+	5000000052+	5000000052+	19500000054+	1000001045+	3993640051+	1200000050+	10902637150+	4000004043+	5203903751+
2000000052+	5100000052+	5100000052+	20145000054+	1000001045+	3984290551+	1176470650+	11016563150+	3921572543+	5203593951+
2000000052+	5200000052+	5200000052+	20800000054+	1000001045+	3975166751+	1153846250+	11130467150+	3846157743+	5203590051+
2100000052+	1000000051+	1000000051+	1550000052+		6360000051+	6000000051+	6900600050+		1305006052+
2100000052+	2000000051+	2000000051+	3200000052+		5964000051+	3000000051+	6679680050+		9631968051+
2100000052+	3000000051+	3000000051+	4950000052+		5702777051+	2000000051+	6586707350+		8361447751+
2100000052+	4000000051+	4000000051+	6800000052+		5510682851+	1500000051+	6557712550+		7666454151+
2100000052+	5000000051+	5000000051+	8750000052+		5360291051+	1200000051+	6566356450+		7216926651+
2100000052+	6000000051+	6000000051+	10800000053+		5237620051+	1000000051+	6599401250+		6897560151+
2100000052+	7000000051+	7000000051+	12950000053+		5134614251+	8571428650+	6649325450+		6656689651+
2100000052+	8000000051+	8000000051+	15200000053+		5046227451+	7500000050+	6711482450+		6467375651+
2100000052+	9000000051+	9000000051+	17550000053+		4969100051+	6666666750+	6782821650+		6314048951+
2100000052+	1000000052+	1000000052+	2000000053+		4900887851+	6000000050+	6861242950+		6187012151+
2100000052+	1100000052+	1100000052+	2255000053+		4839894451+	5454545550+	6945248550+		6079873951+
2100000052+	1200000052+	1200000052+	2520000053+		4784854251+	5000000050+	7033735950+		5988227851+
2100000052+	1300000052+	1300000052+	2795000053+		4734799851+	4615384650+	7125873550+		5908925751+
2100000052+	1400000052+	1400000052+	3080000053+		4688975851+	4285714350+	7221022950+		5839649551+
2100000052+	1500000052+	1500000052+	3375000053+		4646782051+	4000000050+	7318681350+		5778650151+
2100000052+	1600000052+	1600000052+	3680000053+		4607734251+	3750000050+	7418451950+		5724579451+
2100000052+	1700000052+	1700000052+	3995000053+		4571436051+	3529411850+	7520012450+		5676378451+
2100000052+	1800000052+	1800000052+	4320000053+		4537559851+	3333333350+	7623100650+		5633203251+
2100000052+	1900000052+	1900000052+	4655000053+		4505831451+	3157894750+	7727501150+		5594371051+
2100000052+	2000000052+	2000000052+	5000000053+		4476019051+	3000000050+	7833033550+		5559322451+
2100000052+	2100000052+	2100000052+	5355000053+		4447925651+	2857142950+	7939547150+		5527594651+
2100000052+	2200000052+	2200000052+	5720000053+		4421382251+	2727272750+	8046915550+		5498801151+
2100000052+	2300000052+	2300000052+	6095000053+		4396242451+	2608695750+	8155029650+		5472615051+
2100000052+	2400000052+	2400000052+	6480000053+		4372379451+	2500000050+	8263797150+		5448759151+
2100000052+	2500000052+	2500000052+	6875000053+		4349682051+	2400000050+	8373138050+		5426995851+
2100000052+	2600000052+	2600000052+	7280000053+		4328052551+	2307692350+	8482982750+		5407120051+
2100000052+	2700000052+	2700000052+	7695000053+		4307404851+	2222222250+	8593272650+		5388954351+
2100000052+	2800000052+	2800000052+	8120000053+		4287662251+	2142857150+	8703954350+		5372343351+
2100000052+	2900000052+	2900000052+	8555000053+		4268756451+	2068965550+	8814982150+		5357151251+
2100000052+	3000000052+	3000000052+	9000000053+		4250626351+	2000000050+	8926315350+		5343257851+
2100000052+	3100000052+	3100000052+	9455000053+		4233217251+	1935483950+	9037918750+		5330557551+
2100000052+	3200000052+	3200000052+	9920000053+		4216479651+	1875000050+	9149760950+		5318955751+
2100000052+	3300000052+	3300000052+	10395000054+		4200368751+	1818181850+	9261813050+		5308368251+
2100000052+	3400000052+	3400000052+	10880000054+		4184844251+	1764705950+	9374051250+		5298719951+
2100000052+	3500000052+	3500000052+	11375000054+		4169869051+	1714285750+	9486452050+		5289942851+
2100000052+	3600000052+	3600000052+	11880000054+		4155409751+	1666666750+	9598996450+		5281976051+
2100000052+	3700000052+	3700000052+	12395000054+		4141435451+	1621621650+	9711665950+		5274764251+
2100000052+	3800000052+	3800000052+	12920000054+		4127918051+	1578947450+	9824445050+		5268257251+
2100000052+	3900000052+	3900000052+	13455000054+		4114831651+	1538461550+	9937318250+		5262400651+
2100000052+	4000000052+	4000000052+	14000000054+		4102152551+	1500000050+	10050274510+		5257179951+
2100000052+	4100000052+	4100000052+	14555000054+		4089858651+	1463414650+	10163229510+		5252530051+
2100000052+	4200000052+	4200000052+	15120000054+		4077929851+	1428571450+	10276383510+		5248425251+
2100000052+	4300000052+	4300000052+	15695000054+		4066347151+	1395348850+	10389517510+		5244833751+
2100000052+	4400000052+	4400000052+	16280000054+		4055093151+	1363636450+	10502691510+		5241725851+
2100000052+	4500000052+	4500000052+	16875000054+		4044151851+	1333333350+	10615894510+		5239074951+
2100000052+	4600000052+	4600000052+	17480000054+		4033507951+	1304347850+	10729131510+		5236855851+
2100000052+	4700000052+	4700000052+	18095000054+		4023147551+	1276595750+	10842385510+		5235045451+
2100000052+	4800000052+	4800000052+	18720000054+		4013057451+	1250000050+	10955647510+		5233622151+
2100000052+	4900000052+	4900000052+	19355000054+		4003225451+	1224489850+	11068918510+		5232566251+
2100000052+	5000000052+	5000000052+	20000000054+		3993640051+	1200000050+	11182192510+		5231859251+
2100000052+	5100000052+	5100000052+	20655000054+		3984290551+	1176470650+	11295466510+		5231484051+
2100000052+	5200000052+	5200000052+	21320000054+		3975166751+	1153846250+	11408728510+		5231424151+
2100000052+	5300000052+	5300000052+	21995000054+		3966259251+	1132075550+	11521983510+		5231665151+

APPENDIX D

OPERATIONAL COMPUTATIONS

INPUT PARAMETERS AND COSTS

Decision Period 1

SOURCE 1

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 8053156751  5000000049
1000000051             9999999999                             2500000051  7000000048  2000000051
1200000052  2400000052  3600000052  4800000052  6000000052  7200000052  8400000052  9999999999
4000000051  3900000051  3800000051  3700000051  3600000051  3500000051  3400000051  3300000051
```

SOURCE 2

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 7187918051  1000000050
1000000051             9999999999                             2300000051  7000000048  2000000051
9999999999
4000000051
```

SOURCE 3

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 6000000051
1000000051             9999999999             9999999999  6000000051  7000000048  2000000051
8000000050  3219280450-             1100000051             1800000051  2400000051  1000000051
```

Decision Period 2

SOURCE 1

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 8053156751  5000000049
1100000051             9999999999                             2500000051  7100000048  2000000051
1200000052  2400000052  3600000052  4800000052  6000000052  7200000052  8400000052  9999999999
4000000051  3900000051  3800000051  3700000051  3600000051  3500000051  3400000051  3300000051
```

SOURCE 2

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 7187918051  1000000050
1100000051             9999999999                             2300000051  7100000048  2000000051
9999999999
4000000051
```

SOURCE 3

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 6000000051
1100000051             9999999999             9999999999  6100000051  7100000048  2000000051
8000000050  3219280450-             1100000051             1800000051  2400000051  1000000051
```

Decision Period 3

SOURCE 1

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 8053156751  5000000049
1200000051             9999999999                             2500000051  7200000048  2000000051
1200000052  2400000052  3600000052  4800000052  6000000052  7200000052  8400000052  9999999999
4000000051  3900000051  3800000051  3700000051  3600000051  3500000051  3400000051  3300000051
```

SOURCE 2

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 7187918051  1000000050
1200000051             9999999999                             2300000051  7200000048  2000000051
9999999999
4000000051
```

SOURCE 3

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 6000000051
1200000051             9999999999             9999999999  6200000051  7200000048  2000000051
8000000050  3219280450-             1100000051             1800000051  2400000051  1000000051
```

Decision Period 4

SOURCE 1

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 8053156751  5000000049
1300000051             9999999999                             2500000051  7300000048  2000000051
1200000052  2400000052  3600000052  4800000052  6000000052  7200000052  8400000052  9999999999
4000000051  3900000051  3800000051  3700000051  3600000051  3500000051  3400000051  3300000051
```

SOURCE 2

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 7187918051  1000000050
1300000051             9999999999                             2300000051  7300000048  2000000051
9999999999
4000000051
```

SOURCE 3

```
     1000- 1000000051  2000000051  3000000051  4000000051       2000- 6000000051
1300000051             9999999999             9999999999  6300000051  7300000048  2000000051
8000000050  3219280450-             1100000051             1800000051  2300000051  1000000051
```

Decision Period 5

SOURCE 1

1000-	1000000051	2000000051	3000000051	4000000051	2000-	8053156751	5000000049
1200000051		9999999999			2500000051	7400000048	2000000051
1200000052	2400000052	3600000052	4800000052	6000000052	7200000052	8400000052	9999999999
4000000051	3900000051	3800000051	3700000051	3600000051	3500000051	3400000051	3300000051

SOURCE 2

1000-	1000000051	2000000051	3000000051	4000000051	2000-	7187918051	1000000050
1200000051		9999999999			2300000051	7400000048	2000000051
9999999999							
4000000051							

SOURCE 3

1000-	1000000051	2000000051	3000000051	4000000051	2000-	6000000051	
1200000051		9999999999		9999999999	6400000051	7400000048	2000000051
8000000050	3219280450-		1100000051		1800000051	2300000051	1000000051

Decision Period 6

SOURCE 1

1000-	1000000051	2000000051	3000000051	4000000051	2000-	8053156751	5000000049
1100000051		9999999999			2500000051	7500000048	2000000051
1200000052	2400000052	3600000052	4800000052	6000000052	7200000052	8400000052	9999999999
4000000051	3900000051	3800000051	3700000051	3600000051	3500000051	3400000051	3300000051

SOURCE 2

1000-	1000000051	2000000051	3000000051	4000000051	2000-	7187918051	1000000050
1100000051		9999999999			2300000051	7500000048	2000000051
9999999999							
4000000051							

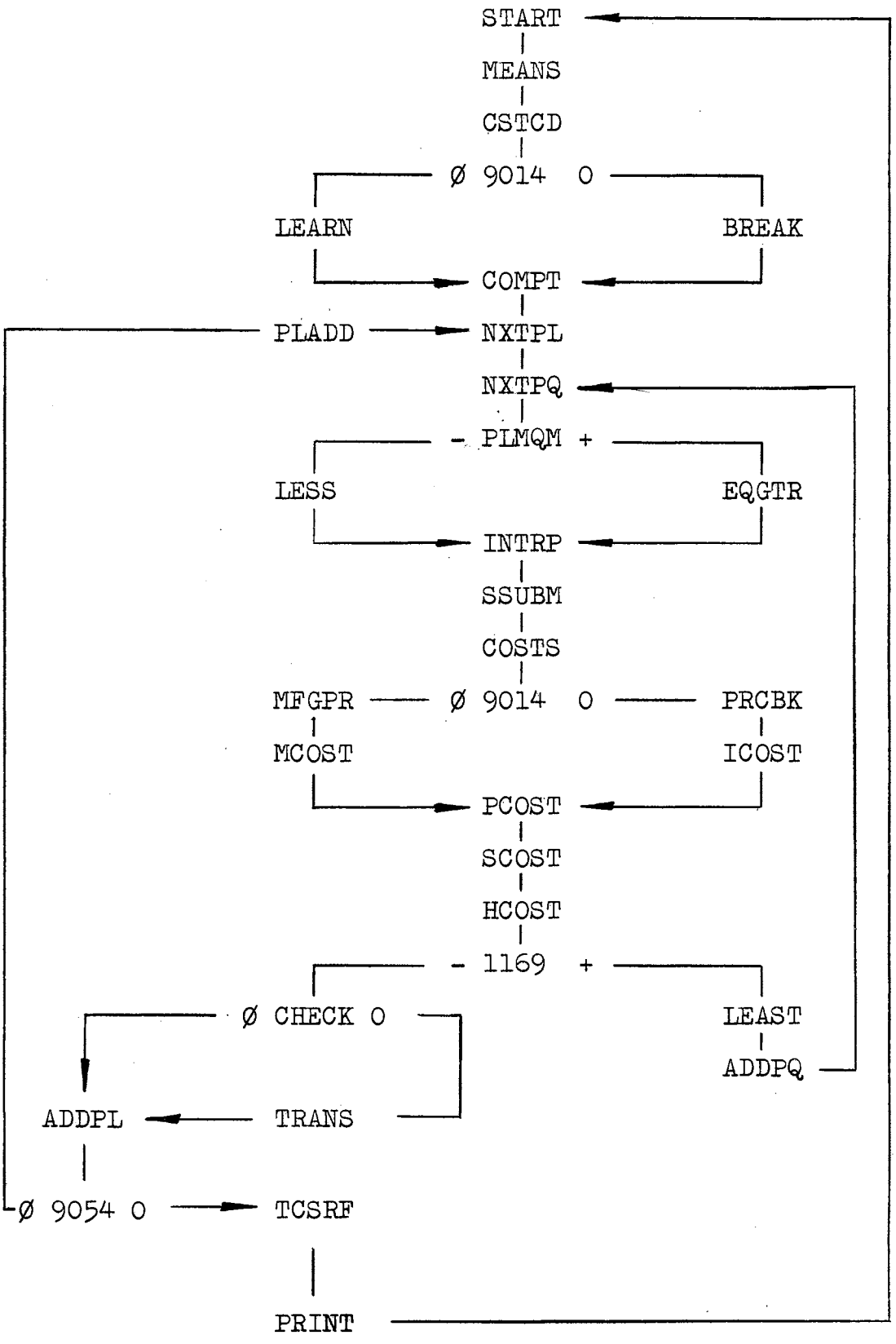
SOURCE 3

1000-	1000000051	2000000051	3000000051	4000000051	2000-	6000000051	
1100000051		9999999999		9999999999	6500000051	7500000048	2000000051
8000000050	3219280450-		1100000051		1800000051	2300000051	1000000051

APPENDIX D-2

OPERATIONAL COMPUTATIONS PROGRAM

OPERATIONAL COMPUTATIONS PROGRAM DIAGRAM



OPERATIONAL COMPUTATIONS PROGRAM

```
 1                                          BLR   0000      0300
 2                                          BLR   0600      1999
 3                                          SYN   START     0301
 4  0301   88 0000 0307          START      RAC   0000
 5  0307   82 0000 0313                     RAB   0000      NXTCD
 6  0313   80 0000 0319          NXTCD      RAA   0000
 7  0319   70 9000 0369                     RCD   9000
 8  0369   65 9000 0327                     RAL   9000
 9  0327   46 0330 0331                     BMI   CSTCD     MEANS
10  0331   69 9001 0337          MEANS      LDD   9001
11  0337   24 4600 0303                     STD   0600 B
12  0303   69 9003 0309                     LDD   9003
13  0309   24 5000 0353                     STD   1000 B
14  0353   69 9005 0359                     LDD   9005
15  0359   24 5400 0403                     STD   1400 B
16  0403   69 9007 0409                     LDD   9007
17  0409   24 5800 0453                     STD   1800 B
18  0453   52 0001 0313                     AXB   0001      NXTCD
19  0330   70 9010 0380          CSTCD      RCD   9010
20  0380   65 9014 0387                     RAL   9014
21  0387   45 0340 0341                     NZE   LEARN     BREAK
22  0340   70 9020 0390          LEARN      RCD   9020      COMPT
23  0341   70 9020 0391          BREAK      RCD   9020
24  0391   70 9030 0390                     RCD   9030      COMPT
25  0390   69 9012 0346          COMPT      LDD   9012
26  0346   24 9049 0302                     STD   9049
27  0302   24 1169 0322                     STD   1169
28  0322   69 9011 0328                     LDD   9011
29  0328   24 9050 0334                     STD   9050      NXTPL
30  0334   69 9001 0440          NXTPL      LDD   9001
31  0440   24 9051 0396                     STD   9051      NXTPQ
32  0396   60 9010 0503          NXTPQ      RAU   9010
33  0503   39 9006 0306                     FMP   9006
34  0306   21 0310 0363                     STU   QSUBM
35  0363   60 9050 0321                     RAU   9050      PLMQM
36  0321   33 0310 0437          PLMQM      FSB   QSUBM
37  0437   46 0490 0441                     BMI   LESS      EQGTR
38  0441   60 9051 0349          EQGTR      RAU   9051
39  0349   34 9010 0352                     FDV   9010
40  0352   21 9052 0459                     STU   9052
41  0459   60 9051 0317                     RAU   9051
42  0317   34 9002 0320                     FDV   9002
43  0320   32 9050 0399                     FAD   9050
44  0399   33 0310 0487                     FSB   QSUBM
45  0487   39 9052 0540                     FMP   9052
46  0540   21 9053 0347                     STU   9053      INTRP
47  0490   60 9051 0397          LESS       RAU   9051
48  0397   34 9010 0350                     FDV   9010
49  0350   21 9052 0357                     STU   9052
50  0357   60 9050 0315                     RAU   9050
51  0315   32 9051 0345                     FAD   9051
```

```
 52 0345   33 0310 0537            FSB  QSUBM
 53 0537   46 0590 0491            BMI            PLUS
 54 0590   69 9013 0446            LDD   9013
 55 0446   24 9053 0347            STD   9053     INTRP
 56 0491   39 8003 0395  PLUS      FMP   8003
 57 0395   34 9010 0348            FDV   9010
 58 0348   34 9002 0351            FDV   9002
 59 0351   21 9053 0347            STU   9053     INTRP
 60 0347   60 9010 0305  INTRP     RAU   9010
 61 0305   33 9001 0335            FSB   9001
 62 0335   45 0338 0339            NZE            SSUB1
 63 0338   33 9001 0367            FSB   9001
 64 0367   46 0370 0371            BMI            TEST2
 65 0370   32 9001 0449            FAD   9001
 66 0449   21 0304 0407            STU   DIFF     1AND2
 67 0371   60 9010 0329  TEST2     RAU   9010
 68 0329   33 9002 0509            FSB   9002
 69 0509   45 0312 0413            NZE            SSUB2
 70 0312   33 9001 0541            FSB   9001
 71 0541   46 0344 0445            BMI            TEST3
 72 0344   32 9001 0323            FAD   9001
 73 0323   21 0304 0457            STU   DIFF     2AND3
 74 0445   60 9010 0553  TEST3     RAU   9010
 75 0553   33 9003 0333            FSB   9003
 76 0333   45 0336 0587            NZE            SSUB3
 77 0336   33 9001 0365            FSB   9001
 78 0365   46 0318 0419            BMI            SSUB4
 79 0318   32 9001 0447            FAD   9001
 80 0447   21 0304 0507            STU   DIFF     3AND4
 81 0339   60 6600 0355  SSUB1     RAU   0600 C   SSUBM
 82 0413   60 7000 0355  SSUB2     RAU   1000 C   SSUBM
 83 0587   60 7400 0355  SSUB3     RAU   1400 C   SSUBM
 84 0419   60 7800 0355  SSUB4     RAU   1800 C   SSUBM
 85 0407   60 6600 0405  1AND2     RAU   0600 C
 86 0405   21 0360 0463            STU   TEMP
 87 0463   60 7000 0455            RAU   1000 C
 88 0455   33 0360 0388            FSB   TEMP
 89 0388   39 0304 0354            FMP   DIFF
 90 0354   32 0360 0355            FAD   TEMP     SSUBM
 91 0457   60 7000 0505  2AND3     RAU   1000 C
 92 0505   21 0360 0513            STU   TEMP
 93 0513   60 7400 0555            RAU   1400 C
 94 0555   33 0360 0438            FSB   TEMP
 95 0438   39 0304 0404            FMP   DIFF
 96 0404   32 0360 0355            FAD   TEMP     SSUBM
 97 0507   60 7400 0356  3AND4     RAU   1400 C
 98 0356   21 0360 0563            STU   TEMP
 99 0563   60 7800 0406            RAU   1800 C
100 0406   33 0360 0488            FSB   TEMP
101 0488   39 0304 0454            FMP   DIFF
102 0454   32 0360 0355            FAD   TEMP     SSUBM
103 0355   21 9054 0314  SSUBM     STU   9054     COSTS
104 0314   65 9014 0421  COSTS     RAL   9014
105 0421   45 0324 0325            NZE   MFGPR    PRCBK
```

```
106 0325   80 0000 0381        PRCBK   RAA   0000      NEXT
107 0381   60 9220 0389        NEXT    RAU   9020 A
108 0389   33 9051 0469                FSB   9051
109 0469   46 0372 0373                BMI   NXTBK     ICOST
110 0372   50 0001 0381        NXTBK   AXA   0001      NEXT
111 0373   60 9230 0431        ICOST   RAU   9030 A
112 0431   39 9010 0384                FMP   9010
113 0384   21 9055 0591                STU   9055
114 0591   21 9059 0499                STU   9059      PCOST
115 0324   80 0000 0430        MFGPR   RAA   0000
116 0430   60 9024 0538                RAU   9024
117 0538   32 9051 0417                FAD   9051
118 0417   69 0420 0201                LDD             0201
119 0420   39 9021 0423                FMP   9021
120 0423   69 0326 0000                LDD             0000
121 0326   39 9023 0379                FMP   9023
122 0379   32 9022 0559                FAD   9022
123 0559   21 9022 0467                STU   9022
124 0467   34 9051 0470                FDV   9051      MCOST
125 0470   21 0374 0377        MCOST   STU   HOURS
126 0377   39 9025 0480                FMP   9025
127 0480   21 0434 0588                STU   LCOST
128 0588   60 0374 0429                RAU   HOURS
129 0429   39 9025 0332                FMP   9025
130 0332   39 9027 0385                FMP   9027
131 0385   32 0434 0311                FAD   LCOST
132 0311   32 9026 0342                FAD   9026
133 0342   39 9010 0495                FMP   9010
134 0495   21 9055 0504                STU   9055
135 0504   21 9059 0499                STU   9059      PCOST
136 0499   60 9015 0557        PCOST   RAU   9015
137 0557   34 9052 0410                FDV   9052
138 0410   21 9056 0517                STU   9056
139 0517   32 9059 0497                FAD   9059
140 0497   21 9059 0456                STU   9059      SCOST
141 0456   60 9054 0364        SCOST   RAU   9054
142 0364   39 9017 0567                FMP   9017
143 0567   34 9052 0520                FDV   9052
144 0520   21 9058 0427                STU   9058
145 0427   32 9059 0308                FAD   9059
146 0308   21 9059 0415                STU   9059      HCOST
147 0415   60 9055 0473        HCOST   RAU   9055
148 0473   34 9010 0376                FDV   9010
149 0376   39 9053 0479                FMP   9053
150 0479   39 9016 0382                FMP   9016
151 0382   34 9052 0435                FDV   9052
152 0435   21 9057 0343                STU   9057
153 0343   32 9059 0523                FAD   9059
154 0523   21 9059 0481                STU   9059
155 0481   60 1169 0573                RAU   1169
156 0573   33 9059 0554                FSB   9059
157 0554   46 0358 0408                BMI   CHECK     LEAST
158 0408   27 9050 0414        LEAST   SET   9050
159 0414   28 1160 0422                SIB   1160      ADDPQ
```

```
160 0422   60 9051 0529      ADDPQ  RAU   9051
161 0529   32 9001 0460             FAD   9001
162 0460   21 9051 0396             STU   9051    NXTPQ
163 0358   60 9049 0465      CHECK  RAU   9049
164 0465   33 1169 0545             FSB   1169
165 0545   46 0398 0549             BMI   ADDPL   TRANS
166 0549   27 9040 0506      TRANS  SET   9040
167 0506   08 1160 0398             LIB   1160    ADDPL
168 0398   60 9054 0556      ADDPL  RAU   9054
169 0556   45 0510 0361             NZE           TCSRF
170 0510   60 9014 0368             RAU   9014
171 0368   45 0472 0424             NZE           PLADD
172 0472   69 9013 0378             LDD   9013
173 0378   24 9022 0424             STD   9022    PLADD
174 0424   60 9050 0531      PLADD  RAU   9050
175 0531   32 9001 0411             FAD   9001
176 0411   21 9050 0519             STU   9050
177 0519   58 0001 0375             AXC   0001
178 0375   69 9012 0581             LDD   9012
179 0581   24 1169 0334             STD   1169    NXTPL
180 0361   74 9040 0461      TCSRF  WR2   9040
181 0461   27 9040 0316             SET   9040
182 0316   08 0760 0522             LIB   0760
183 0522   74 9040 0301             WR2   9040    START
```

APPENDIX D-3

DECISION OUTPUT

DECISION OUTPUT

Decision Period 1

SOURCE 1

1000000052 1600000052 1600000052 1591494953 4992354950 3900000051 1562500050 2715488250 6240443649 4390203251

SOURCE 2

1000000052 1500000052 1500000052 1546812353 3878972750 4000000051 1533333350 2887382950 5171963649 4493791251

SOURCE 3

5000000051 5200000052 5200000052 1300500054 1518036551 3975166751 1153846250 6959217350 5838601949 4844859051

Decision Period 2

SOURCE 1

7000000051 2500000052 2272727352 2434228853 2492015151 4180000051 1100000050 2889721750 2192973350 4798269551

SOURCE 2

1000000052 1800000052 1636363652 1815265653 8386686150 4400000051 1405555650 3150494450 1012817250 4956886751

SOURCE 3

5000000051 5700000052 5181818252 1395072854 2067281551 4325883251 1177193050 7517183450 7978981249 5275110651

Decision Period 3

SOURCE 1

9000000051 2500000052 2083333352 2467713453 2069444351 4560000051 1200000050 3240798750 1986666650 5202746651

SOURCE 2

1100000052 1900000052 1583333352 1880128853 9987246650 4800000051 1452631650 3419855450 1261547050 5413403451

SOURCE 3

5000000051 6100000052 5083333352 1440600054 2616526451 4682177651 1219672150 7961482950 1029453050 5703238451

Decision Period 4

SOURCE 1

1100000052 2500000052 1923076952 2505941553 1805590451 4940000051 1300000050 3614770500 1877814050 5619258551

SOURCE 2

1300000052 1900000052 1461538552 1922757253 8766684350 5200000051 1573684250 3841466450 1199651550 5861480251

SOURCE 3

6000000051 6500000052 5000000052 1536246254 2483851051 4905476751 1260000050 8463530050 9935404049 5977183751

Decision Period 5

SOURCE 1

9000000051 2500000052 2083333352 2467713453 2069444351 4560000051 1200000050 3330820950 1986666650 5211748851

SOURCE 2

1100000052 1900000052 1583333352 1880128853 9987246650 4800000051 1452631650 3514851450 1261547050 5422903051

SOURCE 3

5000000051 6100000052 5083333352 1440600054 2966526451 4562177651 1259016450 7972921650 1029453050 5588316751

Decision Period 6

SOURCE 1

7000000051 2500000052 2272727352 2434228853 2492015151 4180000051 1100000050 3052522950 2192973350 4814549651

SOURCE 2

1000000052 1700000052 1545454552 1637144853 8286686150 4400000051 1488235350 3177987150 1072394750 4973861751

SOURCE 3

5000000051 5600000052 5090909152 1345163754 2067281551 4224822551 1276785750 7611265050 8121463049 5194842251

VITA

Wolter Joseph Fabrycky

Candidate for the Degree of

Doctor of Philosophy

Thesis: OPTIMAL INVENTORY POLICY FOR THE MULTISOURCE ITEM

Major Field: Industrial Engineering and Management

Biographical:

Personal Data: Born December 6, 1932 in Queens County, New York, the son of Louis Ludwig and Stephanie Lola Fabrycky of Mena, Arkansas.

Education: Attended High School in New York and Arkansas and, after graduation in 1951, entered Southern State College at Magnolia, Arkansas. Transferred to the University of Wichita in 1953 and received the degree of Bachelor of Science in Industrial Engineering in January, 1957. Entered the University of Arkansas in February, 1957 and received the degree of Master of Science in Industrial Engineering in May, 1958. Entered the Oklahoma State University in September, 1960 and completed the requirements for the degree of Doctor of Philosophy in May, 1962.

Professional Experience: Employed by Cessna Aircraft Company as a Junior Design Engineer from February, 1954 to February, 1957. Served as an Instructor in Industrial Engineering from September, 1957 to June, 1960 at the University of Arkansas. Appointed to the Summer Professor Program at Chance Vought Aircraft Company during the Summers of 1958 and 1959. Employed by the United States Air Force as an Operations Research Analyst for the Summer of 1960 and by the Ethyl Corporation as a Management Methods Analyst during the Summer of 1961. Appointed Assistant Professor of Industrial Engineering at the Oklahoma State University effective June, 1962.

Professional Membership: American Institute of Industrial Engineers, Operations Research Society of America, American Society for Engineering Education, Alpha Pi Mu, Registered Professional Engineer.