

$$\begin{array}{c}
 \text{A} \\
 \begin{array}{|c|c|c|c|c|c|c|}
 \hline
 0,0 & 0,1 & 0,2 & \circ & \circ & \circ & 0,N-3 \quad 0,N-2 \quad 0,N-1 \\
 \hline
 \end{array} \\
 \underbrace{\hspace{1.5cm}}_{\lambda_1} \qquad \underbrace{\hspace{1.5cm}}_{\lambda_k}
 \end{array}
 \times
 \begin{array}{c}
 \text{B} \\
 \begin{array}{|c|}
 \hline
 0,0 \\
 \hline
 1,0 \\
 \hline
 2,0 \\
 \hline
 \circ \\
 \hline
 \circ \\
 \hline
 \circ \\
 \hline
 N-3,0 \\
 \hline
 N-2,0 \\
 \hline
 N-1,0 \\
 \hline
 \end{array}
 \end{array}
 =
 \begin{array}{c}
 \text{C} \\
 \begin{array}{|c|c|c|}
 \hline
 \lambda_1\beta_1 + \dots + \lambda_k\beta_k & & \dots \\
 \hline
 \end{array}
 \end{array}$$

The diagram illustrates the multiplication of two matrices, A and B, to produce matrix C. Matrix A is a row vector with elements $0,0, 0,1, 0,2, \dots, 0,N-3, 0,N-2, 0,N-1$. The first three elements are grouped by a brace labeled λ_1 , and the last three elements are grouped by a brace labeled λ_k . Matrix B is a column vector with elements $0,0, 1,0, 2,0, \dots, N-3,0, N-2,0, N-1,0$. The first three elements are grouped by a brace labeled β_1 , and the last three elements are grouped by a brace labeled β_k . The result matrix C is a row vector with elements $\lambda_1\beta_1 + \dots + \lambda_k\beta_k, \dots$.