

MATRIX

MULTIPLICATION

$$C_{i,j} = \sum_k A_{i,k} B_{k,j}$$

Diagram illustrating the matrix multiplication formula:

- $C_{i,j}$ is the result matrix element, where i is the row index and j is the column index.
- $A_{i,k}$ is the element from the first matrix, where i is the row index and k is the column index.
- $B_{k,j}$ is the element from the second matrix, where k is the row index and j is the column index.

Matrix multiplication is associative but not commutative.

$$A(BC) = (AB)C$$

$$AB \neq BA$$