

Matrices M3 – Matrix Multiplication

Find the product, if possible.

1. $\begin{bmatrix} 2 & -1 \\ 3 & 0 \end{bmatrix} \times \begin{bmatrix} 1 & -2 \\ 5 & 4 \end{bmatrix}$

2. $[7 \quad -1] \cdot \begin{bmatrix} 3 \\ 2 \end{bmatrix}$

3. $\begin{bmatrix} 0 & 2 \\ 4 & -1 \end{bmatrix} \begin{bmatrix} 6 & 3 \\ -2 & -1 \end{bmatrix}$

4. $\begin{bmatrix} 2 \\ -4 \end{bmatrix} \times [4 \quad 1]$

5. $[3 \quad 0 \quad -5] \cdot \begin{bmatrix} 1 \\ 2 \end{bmatrix}$

6. $\begin{bmatrix} -1 & 0 & 2 \\ 3 & -2 & -2 \\ 1 & 4 & 6 \end{bmatrix} \begin{bmatrix} 0 & 2 & -2 \\ 2 & -1 & 4 \\ 3 & -1 & 0 \end{bmatrix}$

7. Show that the Distributive property, $C(A + B) = CA + CB$ is true for the matrices:

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 3 & 2 \\ 0 & 1 \end{bmatrix}, C = \begin{bmatrix} 1 & 0 \\ 2 & 4 \end{bmatrix}$$