

6B Matrix Multiplication

1. Calculate the value of AB when:

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

2. Given that:

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

Calculate the value of \mathbf{AB} and \mathbf{BA}

3. Given that:

$$A = [1 \quad -1 \quad 2], \quad B = [3 \quad -2], \quad C = \begin{bmatrix} 4 \\ 5 \end{bmatrix}$$

Determine whether each of the following can be evaluated and if so, find the product:

a) **AB**

b) **BC**

c) **CA**

d) **BCA**

4. Given that $BA = (0)$, calculate AB in terms of a .

$$\mathbf{A} = \begin{bmatrix} -1 \\ a \end{bmatrix}, \mathbf{B} = [b \quad 2]$$