

2x2 MATRIX MULTIPLICATION

EXERCISE 1: Evaluate the following SCALAR multiplications

a)

$$2 \begin{pmatrix} 5 & -2 \\ 0 & 6 \end{pmatrix}$$

b)

$$9 \begin{pmatrix} 1 & 3 \\ -12 & -5 \end{pmatrix}$$

c)

$$3 \begin{pmatrix} -2w & 4y \\ 5 & -y \end{pmatrix}$$

d)

$$4 \begin{pmatrix} -12 & 3 \\ 9 & 2 \end{pmatrix}$$

EXERCISE 2: Given the following, find the value of k

$$k \begin{pmatrix} 2 & 3 \\ 5 & 6 \end{pmatrix} = \begin{pmatrix} 6 & 9 \\ 15 & 18 \end{pmatrix}$$

EXERCISE 3: Find the values of x and y

$$2 \begin{pmatrix} x \\ 2 \end{pmatrix} - \begin{pmatrix} 6 \\ y \end{pmatrix} = \begin{pmatrix} 5 \\ 3 \end{pmatrix}$$

EXERCISE 4: Multiply matrices A and B

a)

$$A = \begin{pmatrix} 2 & 0 \\ 2 & 0 \end{pmatrix} \quad B = \begin{pmatrix} 5 & 1 \\ 3 & 4 \end{pmatrix}$$

b)

$$A = \begin{pmatrix} 3 & 1 \\ -4 & 2 \end{pmatrix} \quad B = \begin{pmatrix} -9 & -7 \\ 4 & -6 \end{pmatrix}$$

EXERCISE 5: Evaluate the following given A and B below

$$A = \begin{pmatrix} 3 & 9 \\ 4 & 12 \end{pmatrix} \quad B = \begin{pmatrix} 2 & -3 \\ 6 & 8 \end{pmatrix}$$

a) $3A - BA$

b) AB

c) $BA - A$

d) $AB - 4A$