6A Introduction to Matrices

1. Write the dimensions of the following matrices

a) $\begin{bmatrix} 2 & -1 \\ 1 & 3 \end{bmatrix}$

b) $\begin{bmatrix} 1 & 0 & 2 \end{bmatrix}$

c) $\begin{bmatrix} 4 \\ -1 \end{bmatrix}$

d) $\begin{bmatrix} 3 & 2 \\ -1 & 1 \\ 0 & -3 \end{bmatrix}$

2. Find the value of:

a) $\begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix} + \begin{bmatrix} -1 & 4 \\ 5 & 3 \end{bmatrix}$

b) $\begin{bmatrix} 1 & -3 \\ 4 & 2 \\ 1 & 1 \end{bmatrix} - \begin{bmatrix} 0 & 2 \\ 1 & -5 \\ -3 & 2 \end{bmatrix}$

3. Given that **A** + **B** = **C**, find the values of a, b, x and y

$$A = \begin{bmatrix} 2 & 3 \\ 1 & a \end{bmatrix}, \ B = \begin{bmatrix} b & -1 \\ 2 & 4 \end{bmatrix}, \ C = \begin{bmatrix} 3 & y \\ x & 3 \end{bmatrix}$$

4. Given

$$A = \begin{bmatrix} 1 & 2 \\ -1 & 0 \end{bmatrix}, \ B = \begin{bmatrix} 6 & 0 & -4 \end{bmatrix}$$

a) Find the value of 2**A**:

b) Find the value of $^1/_2$**B**:

5. Given that **A** + 2**B** = **C**, find the values of a, b and c

$$A = \begin{bmatrix} a & 0 \\ 1 & 2 \end{bmatrix}, \ B = \begin{bmatrix} 1 & b \\ 0 & 3 \end{bmatrix}, \ C = \begin{bmatrix} 6 & 6 \\ 1 & c \end{bmatrix}$$