

## 0.3 Introduction to Matrices

1. What are the dimensions of each of the following matrices?

(a)  $\begin{bmatrix} 2 & -1 \\ 0 & 5 \\ 1 & 0 \end{bmatrix}$

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

(c)  $\begin{bmatrix} -8 & 0 \\ 3 & 2 \end{bmatrix}$

2. Find each of the following

(a)  $\begin{bmatrix} 2 \\ 5 \end{bmatrix} + \begin{bmatrix} 9 \\ 0 \end{bmatrix}$

(c)  $\begin{bmatrix} -8 & 0 \\ 3 & 2 \end{bmatrix} + \begin{bmatrix} 2 & 0 \\ 0 & 1 \end{bmatrix}$

(e)  $3\begin{bmatrix} -8 & 0 \\ 3 & 2 \end{bmatrix} - 0.5\begin{bmatrix} 2 & 0 \\ 0 & 1 \end{bmatrix}$

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

(d)  $-2\begin{bmatrix} 4 & -3 & 0 \\ 8 & 7 & 2 \end{bmatrix}$

### Answers

1.

(a)  $3 \times 2$  matrix

(b)  $1 \times 4$  matrix

(c)  $2 \times 2$  matrix

2. Find each of the following

(a)  $\begin{bmatrix} 11 \\ 5 \end{bmatrix}$

(c)  $\begin{bmatrix} -6 & 0 \\ 3 & 3 \end{bmatrix}$

(e)  $\begin{bmatrix} -25 & 0 \\ 9 & 5.5 \end{bmatrix}$

(b)  $\begin{bmatrix} 2 & -5 & -1 \end{bmatrix}$

(d)  $\begin{bmatrix} -8 & 6 & 0 \\ -16 & -14 & -4 \end{bmatrix}$