

$$E = \begin{bmatrix} a & d \\ b & e \\ c & f \end{bmatrix}, \quad \text{order of } E \text{ is 3-by-2}$$

$$F = [2] \quad \text{order of } F \text{ is 1-by-1}$$

$$G = \begin{bmatrix} 2 & 3 & 0 \\ 1 & 2 & 3 \\ 2 & 4 & 5 \end{bmatrix}, \quad \text{order of } G \text{ is 3-by-3}$$

$$H = \begin{bmatrix} 2 & 3 & 4 \\ 1 & 0 & 6 \end{bmatrix} \quad \text{order of } H \text{ is 2-by-3}$$

2. Which of the following matrices are equal?

$$A = [3],$$

$$B = [3 \quad 5], C = [5 \quad -2]$$

$$D = [5 \quad 3], E = \begin{bmatrix} 4 & 0 \\ 6 & 2 \end{bmatrix}.$$

$$F = \begin{bmatrix} 2 \\ 6 \end{bmatrix}$$

$$G = \begin{bmatrix} 3-1 \\ 3+3 \end{bmatrix}.$$

$$H = \begin{bmatrix} 4 & 0 \\ 6 & 2 \end{bmatrix}, I = [3 \quad 3+2]$$

$$J = \begin{bmatrix} 2+2 & 2-2 \\ 2+4 & 2+0 \end{bmatrix}$$

Ans. Equal matrices are

$$A = C \quad B = I$$

$$E = H = J \quad F = G$$

3. Find the values of a, b, c and d which satisfy the matrix equation.

$$\begin{bmatrix} a+c & a+2b \\ c-1 & 4d-6 \end{bmatrix} = \begin{bmatrix} 0 & -7 \\ 3 & 2d \end{bmatrix}$$

Ans. $a + c = 0 \dots\dots\dots(i)$

$a + 2b = -7 \dots\dots\dots(ii)$

$c - 1 = 3 \dots\dots\dots(iii)$

$4d - 6 = 2d \dots\dots\dots(iv)$

From (iii)

$c = 3 + 1$

$\boxed{c = 4}$

From (iv)

$4d - 2d = 6$

$2d = 6$

$d = \frac{6}{2}$

$\boxed{d = 3}$

Put value of $c = 4$ in (i)

$a + 4 = 0$

$\boxed{a = -4}$

Put value of $a = -4$ in (ii)

$-4 + 2b = -7$

$2b = -7 + 4$

$2b = -3$

$\boxed{b = \frac{-3}{2}}$

Types of Matrices

(e) Row Matrix.

A matrix is called a row matrix if it has only one row.

e.g.; the matrix $M = [2 \quad -1 \quad 7]$ is a row matrix of order 1-by-3 and $M = [1 \quad -1]$ is a row matrix of order 1-by-2.

(ii) Column Matrix.

A matrix is called a column matrix if it has only one column e.g., $M = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$

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Wenbin Ji



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