

1 matrices

$$\begin{bmatrix} 3 & 4 & -5 \\ x & a & 0 \\ -1 & -y & \sqrt{3} \end{bmatrix}$$

1.1 order

$m \times n$ (read m cross n)
 m = number of rows
 n = number of columns

1.2 elements

Members of a matrix.

1.3 letters

Capital letters are used to denote matrices,
small letters are used to denote elements of the
matrices.

$$A = \begin{bmatrix} -3 & 4 & 6 \\ 1 & 0 & \sqrt{2} \end{bmatrix} = [a_{ij}]$$

a_{ij} = element in i^{th} row and j^{th} column.
ex:

$$\begin{aligned} a_{12} &= 4 \\ a_{23} &= \sqrt{2} \end{aligned}$$

$$\begin{bmatrix} 3 & 4 & -5 \\ x & a & 0 \end{bmatrix}$$

no. of rows $\rightarrow m$
no. of columns $\rightarrow n$

1.4 Types

Row Matrix is matrix having only one row.

$$[1 \quad 2 \quad 3]$$

Column Matrix is matrix having only one column.

$$\begin{bmatrix} 3 \\ -1 \\ 2 \end{bmatrix}$$

Null Matrix Denoted by $0_{m \times n}$, matrices
whose all elements are 0.

$$0 = \begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$$