

Designation	Example	Description
Square matrix	$\begin{bmatrix} 4 & 1 & \frac{3}{4} \\ 2 & 11 & \sqrt{4} \\ -9 & 1 & 3 \end{bmatrix}$	A matrix is said to be square if the number of rows is equal to the number of columns.
Triangular matrix	$\begin{bmatrix} -7 & \sqrt{5} & 9 \\ 0 & 4 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	A square matrix is said to be triangular if all of its elements below the main diagonal are zero or all of its elements above the main diagonal are zero.
Diagonal matrix	$\begin{bmatrix} \frac{5}{2} & 0 & 0 & 0 \\ 0 & 10 & 0 & 0 \\ 0 & 0 & -5 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$	Unlike the previous one, in this matrix all the elements above and below the main diagonal must be equal to zero.
Identity matrix	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	A diagonal matrix in which all of the diagonal elements are equal to one.
Null matrix	$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$	The matrices whose value of all elements is equal to zero.
Row matrix	$\left[\frac{1}{2} \quad -1 \quad 0 \quad 9 \right]$	A matrix is said to be a row matrix if it has only one row.
Column matrix	$\begin{bmatrix} 2 \\ x^3 \\ \sqrt{6} \end{bmatrix}$	Similar to the previous one, but in this case, the matrix has only one column.