Special Matrices

Zero Matrix

$m \times n$

$$O = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$$

Diagonal Matrix

$$D = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{pmatrix}$$

Banded Matrix

For example
tridiagonal

$$\begin{pmatrix} d_1 & d_4 & 0 \\ d_6 & d_2 & d_5 \\ 0 & d_7 & d_3 \end{pmatrix}$$

Identity Matrix

$\underline{n} \times \underline{n}$

$A I = A = I A \leftarrow (True)$

$$I = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \leftarrow$$

Upper Triangular Matrix
Lower

$$\leftarrow U = \begin{pmatrix} 1 & 4 & 5 \\ 0 & 2 & 6 \\ 0 & 0 & 3 \end{pmatrix}$$

$$L = \begin{pmatrix} 1 & 0 & 0 \\ 4 & 2 & 0 \\ 5 & 6 & 3 \end{pmatrix}$$