Last week ...

Friday 20 November 2020 08:48

$$A = \begin{bmatrix} 2 & 1 & 4 \\ 3 & 2 & 6 \end{bmatrix}$$

Rank = rows × cols

$\Rightarrow$ Rank A = 2×3

indexing elements : a_{ij} i = Row, j = col.

$\Rightarrow a_{13}$ = element in Row 1 col 3

$a_{13} = 4$

$$A = \begin{bmatrix} 1 & 3 \\ 4 & 5 \end{bmatrix} \quad B = \begin{bmatrix} 2 & 1 \\ 3 & 1 \end{bmatrix} \quad A+B = \begin{bmatrix} 1+2 & 3+1 \\ 4+3 & 5+1 \end{bmatrix} = \begin{bmatrix} 3 & 4 \\ 7 & 6 \end{bmatrix}$$

Subtraction done in a similar way.

$2 \times 1 = 2$

$AI = A$

Identity Matrix I

$$2\times 2 \quad I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \qquad 3\times 3 \quad I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Transpose: if $A = \begin{bmatrix} 3 & 4 & 6 \\ 1 & 7 & 2 \end{bmatrix}$

$$A^T = \begin{bmatrix} 3 & 1 \\ 4 & 7 \\ 6 & 2 \end{bmatrix}$$

i.e. rows become cols

& cols become rows