PC

Multiplying Matrices

* in order to multiply matrices the # of columns of the 1st must match the # of rows of the 2nd

ex matrix A is 3×4 & matrix B is 4×3

$3\times 4 \quad 4\times 3 \rightarrow 3\times 3$

match ✓ can multiply → will be the result

$A = \begin{bmatrix} 3 & -1 \\ 4 & 0 \end{bmatrix}$ $B = \begin{bmatrix} -2 & 0 & 6 \\ 3 & 5 & 1 \end{bmatrix}$

2×2 2×3 ✓ can multiply, answer will be 2×3

$$AB = \begin{bmatrix} 3\cdot(-2)+(-1)(3) & 3(0)+(-1)(5) & 3(6)+(-1)(1) \\ 4(-2)+0(3) & 4(0)+0(5) & 4(6)+0(1) \end{bmatrix}$$

technique is add over & down

$$AB = \begin{bmatrix} -9 & -5 & 17 \\ -8 & 0 & 24 \end{bmatrix}$$