Matrices

Ex: $\begin{bmatrix} 5 & x \\ 7 & 12 \end{bmatrix} = \begin{bmatrix} 5 & 10 \\ 7 & 12 \end{bmatrix}$

$x = 10$

Ex: $\begin{bmatrix} 2x+y \\ x-3y \end{bmatrix} = \begin{bmatrix} 5 \\ 13 \end{bmatrix}$

$2x+y=5$

$-2(x-3y=13)$

$2x+y=5$

$-2x+6y=-26$

$7y=-21$

$y=-3$

$x-3(-3)=13$

$x+9=13$

$x=4$

Ex: $5\begin{bmatrix} x & 12 \\ 3 & -1 \end{bmatrix}$

$= \begin{bmatrix} 5x & 60 \\ 15 & -5 \end{bmatrix}$

Adding and Subtracting Matrices

$\begin{bmatrix} a & b & c \\ e & f & g \end{bmatrix}$ 2×3 $\qquad$ $\begin{bmatrix} a & b \\ c & d \\ e & f \end{bmatrix}$ 3×2

(Row x Column) Dimensions

*To be able to add or subtract

The Matrices must have the SAME Dimensions

Ex: a) $\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}_{2\times2} + \begin{bmatrix} 1 & 3 \end{bmatrix}_{1\times2}$ ∅

b) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}_{2\times2} - \begin{bmatrix} 0 & 1 \\ 7 & 3 \end{bmatrix}_{2\times2} = \begin{bmatrix} (1-0) & (2-1) \\ (3-7) & (4-3) \end{bmatrix}$

$= \begin{bmatrix} 1 & 1 \\ -4 & 1 \end{bmatrix}$

#w: Pg 191, 192

Prob: 14, 19–22

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Pg 197

Prob: 10–13