Notes for section 4-1 Read p. 134-136 (top)

Matrix: a rectangular array of variables or constants in horizontal rows and vertical columns

Player	Attempts	Completions	Touch downs	Interceptions
Rivers	478	312	34	11
Pennington	476	321	19	7
Warner	598	401	30	14
Brees	632	413	34	17
P.Manning	555	371	27	12

$$\begin{bmatrix} 478 & 312 & 34 & 11 \\ 476 & 321 & 19 & 7 \\ 598 & 401 & 30 & 14 \\ 635 & 413 & 34 & 17 \\ 555 & 371 & 27 & 12 \end{bmatrix}$$

Dimensions of a matrix: Rows **by** Columns
R x C

elements

EX: $\begin{bmatrix} 478 & 312 & 34 & 11 \\ 476 & 321 & 19 & 7 \\ 598 & 401 & 30 & 14 \\ 635 & 413 & 34 & 17 \\ 555 & 371 & 27 & 12 \end{bmatrix}$ → dimensions 5 x 4

(5 Rows by 4 Columns)

EX $\begin{bmatrix} 1 & 0 & 6 \\ 4 & 2 & -5 \\ -3 & 1 & -1 \\ 3 & 10 & 8 \end{bmatrix}$ dimensions 4 x 3

EX $\begin{bmatrix} x \\ y \\ z \end{bmatrix}$ dimensions 3 x 1 (Column Matrix)

EX $\begin{bmatrix} 5 & 10 & -15 & 0 \end{bmatrix}$ dimensions 1 x 4 (Row Matrix)

EX $\begin{bmatrix} 1 & 3 \\ 5 & 7x \end{bmatrix}$ dimensions 2 x 2 (Square Matrix)

R=C

EX Zero matrix: every element is zero

Use Matrices to solve equations

EX: $\begin{bmatrix} y \\ 3 \end{bmatrix} = \begin{bmatrix} 3x-2 \\ 2y+x \end{bmatrix} \rightarrow \begin{matrix} y = 3x-2 \\ 3 = 2y+x \end{matrix}$

Solve as a system

x = 1
y = 1

EX: $\begin{bmatrix} x & y+2 \\ 6 & z \end{bmatrix} = \begin{bmatrix} 10 & 25 \\ 2z & y-2x \end{bmatrix}$ → $\begin{cases} x = 10 \\ y+2 = 25 \\ 6 = 2z \\ z = y-2x \end{cases}$

Solve for x, y, z

Match elements

x = 10
y = 23
z = 3

Pg. 156-7
#10-24all
30-31
set up a matrix with info like a chart