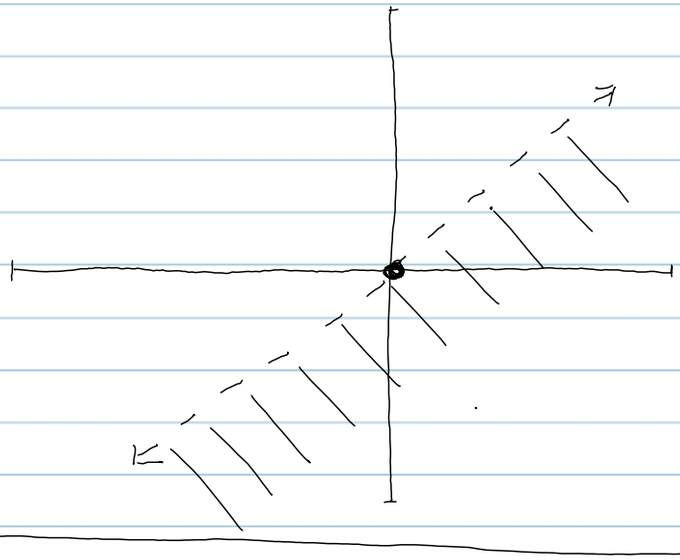
Ana Dolak

Alg II Honors

11/5/10

$y < x$
$y = x$
$3 \not< 2$
$4 \not< 3$

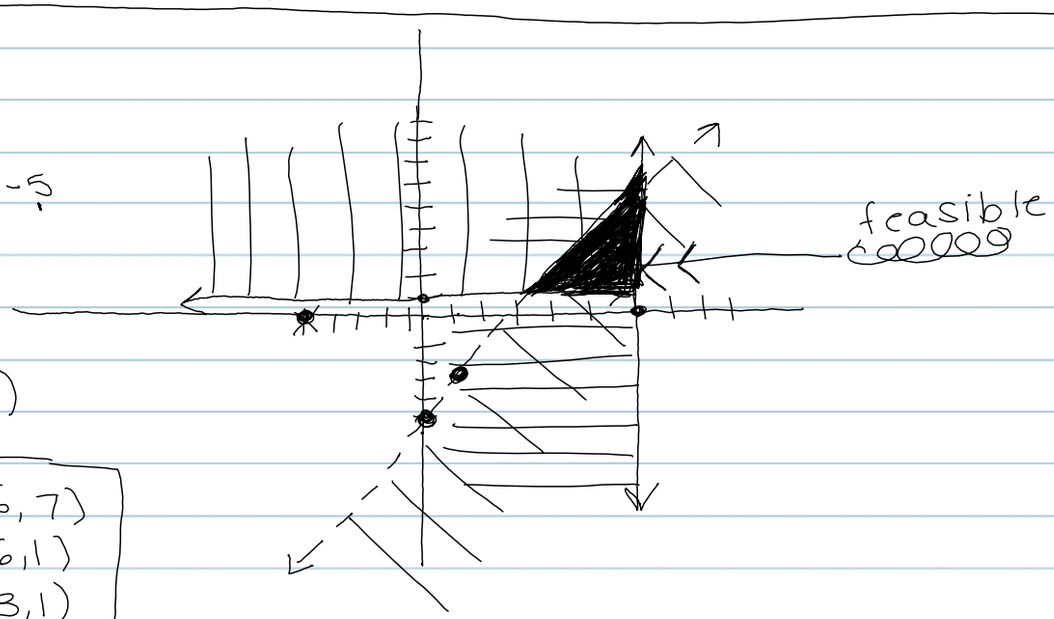


$y \geq 1$
$x \leq 6$
$y < 2x - 5$

x	y
0	-5
1	-3

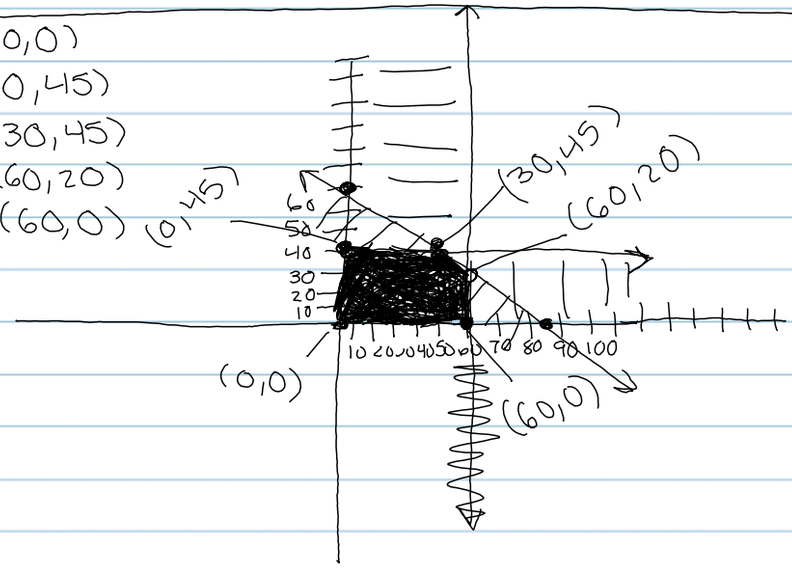
$(y = 2(6) - 5)$
$y = 12 - 5$
$y = 7$

(6, 7)
(6, 1)
(3, 1)



$f(x, y) = 10x + 7y$
$0 \leq x \leq 60$ →
$0 \leq y \leq 45$
$5x + 6y \leq 420$

(0,0)
(0,45)
(30,45)
(60,20)
(60,0)

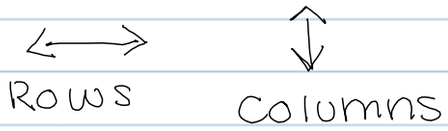


x, y	10x + 7y	f(x, y)
(0,0)	0 + 0	0
(0,45)	0 + 7(45)	315
(30,45)	10(30) + 7(45)	615
(60,20)	10(60) + 7(20)	740
(60,0)	10(60) + 7(0)	600

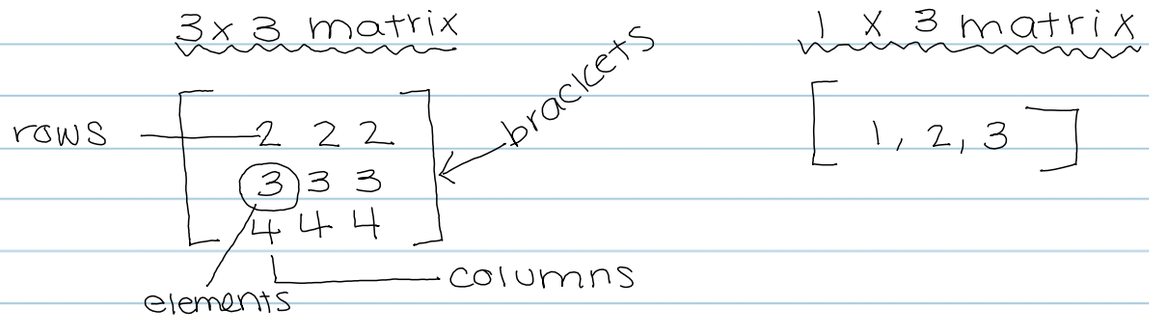
Algebra II Honors November 29

Chapter 4.1

- **Describe a Matrix:** rectangular display of data, called elements. A matrix is described as rows and columns



- **Dimensions of a matrix:** the numbers and their orders- ex: 3x3 matrix



Matrix Equations

Health Insurance

	Individual	Family
This year		
Comprehensive:	$ 694.32	1725
ST:	$ 451.80	1187
Plus:	$ 489.48	1248
Next year		
comp:	$ 683.91	1699
ST:	$ 463	1217
Plus:	$ 499	1273

Adding & Subtracting Matrices

- Matrices must be same dimensions

$$\begin{bmatrix} 2 & 3 \\ 1 & -1 \end{bmatrix} + \begin{bmatrix} 3 & -1 \\ 4 & -2 \end{bmatrix} = \begin{bmatrix} 5 & 2 \\ 5 & -3 \end{bmatrix}$$

same problem!

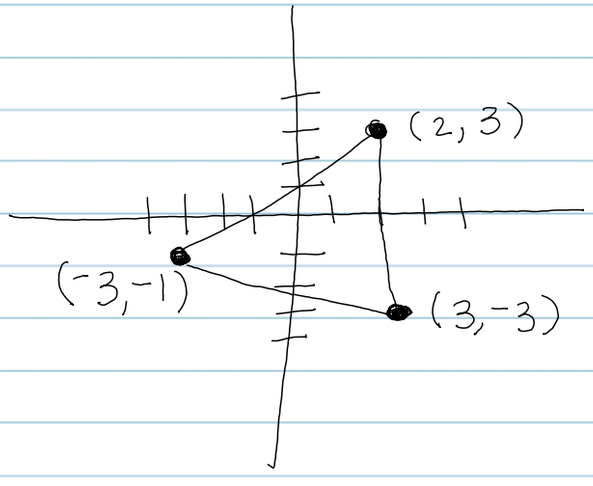
$$\begin{bmatrix} 8 & 3 \\ 4 & 0 \end{bmatrix} - \begin{bmatrix} 2 & -7 \\ 6 & -1 \end{bmatrix} = \begin{bmatrix} 6 & 10 \\ -2 & 1 \end{bmatrix}$$

OR

$$\begin{bmatrix} 8 & 3 \\ 4 & 0 \end{bmatrix} + \begin{bmatrix} -2 & 7 \\ -6 & 1 \end{bmatrix} = \begin{bmatrix} 6 & 10 \\ -2 & 1 \end{bmatrix}$$

Scalar Multiplication:

$$3\begin{bmatrix} 2 & 1 \\ 4 & 6 \end{bmatrix} = \begin{bmatrix} 6 & 3 \\ 12 & 18 \end{bmatrix}$$



X	Y
2	3
3	-3
-3	-1

Alg II Honors

December 1

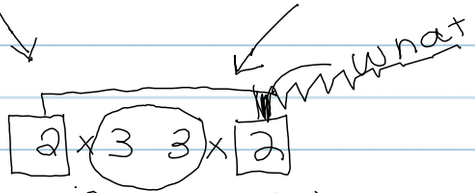
Multiplication of Matrices

- size

$$\begin{bmatrix} 2 & 3 & 4 \\ 2 & 3 & 4 \end{bmatrix} \qquad \begin{bmatrix} 2 & 3 \\ 3 & 2 \\ 2 & 3 \end{bmatrix}$$

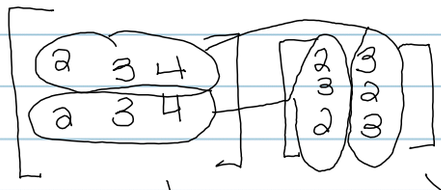
2×3 $\qquad$ 3×2

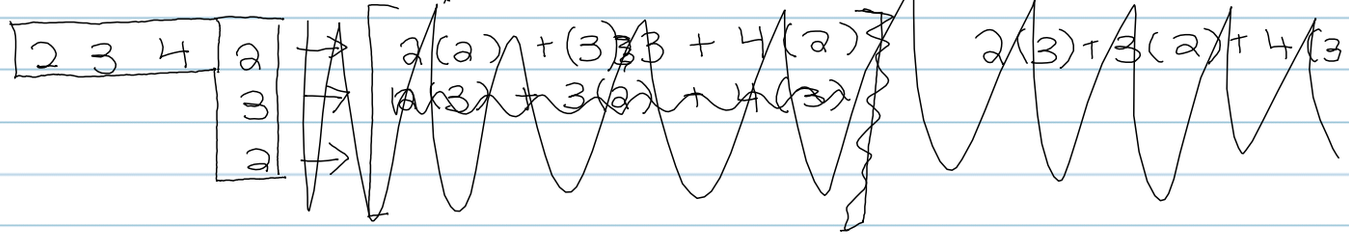
Is it possible?



- if the two inner numbers are the same, it is possible to multiply them
- the two outer numbers will tell you the size of what the new matrice will be.

Result: 2×2





$$\begin{bmatrix} 21 & 24 \\ 21 & 24 \end{bmatrix}$$

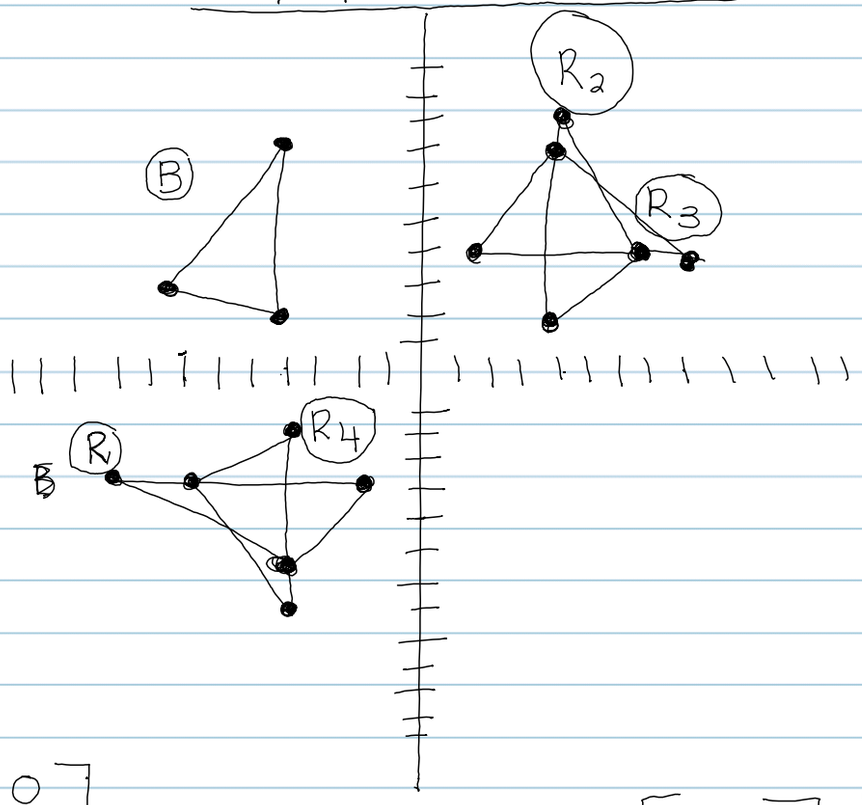
$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$$

$$\begin{bmatrix} 1(5)+2(7) & 1(6)+2(8) \\ 3(5)+4(7) & 3(6)+4(8) \end{bmatrix} \rightarrow \begin{bmatrix} 19 & 22 \\ 43 & 50 \end{bmatrix}$$

Alg II - Honors

December 3, 2010

Graphing Matrices



$$A = \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} -7 & -4 & -4 \\ 4 & 8 & 2 \end{bmatrix}$$

$A \cdot B = R_1$

$$R_1 = \begin{bmatrix} -4 & -8 & -2 \\ -7 & -4 & -4 \end{bmatrix}$$

$$C = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$$

$C \cdot B = R_2$

$$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \cdot \begin{bmatrix} -7 & -4 & -4 \\ 4 & 8 & 2 \end{bmatrix} =$$

$$R_2 = \begin{bmatrix} 7 & 4 & 4 \\ 4 & 8 & 2 \end{bmatrix}$$

$$E = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

$E \cdot B = R_4$

$$R_4 = \begin{bmatrix} -7 & -4 & -4 \\ -4 & -8 & -2 \end{bmatrix}$$

$$D = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$$

$D \cdot B = R_3$

$$R_3 = \begin{bmatrix} 4 & 8 & 2 \\ 7 & 4 & 4 \end{bmatrix}$$