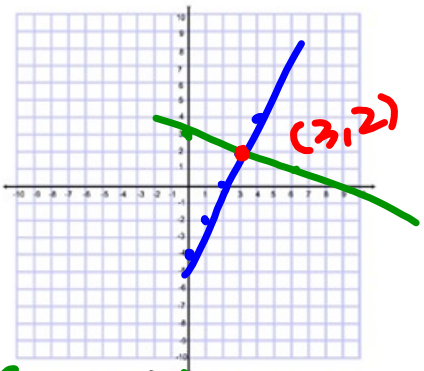
Bell Ringer - Change #2...

Tuesday 10/15

1) Solve the system by graphing.

$y = 2x - 4$

$y = -\frac{1}{3}x + 3$ (3, 2)



2) Solve the system using substitution.

$y = 3x + 2$

$7x - 4y = 7$

change both equations

$7x - 4(3x+2) = 7$

$7x - 12x - 8 = 7$

$+8 \quad +8$

$-5x = 15$

$\frac{-5x}{-5} = \frac{15}{-5}$

(-3, -7)

Turn in Week #8 Packet!

Solving Systems Day 2 ws due tomorrow

Solving systems of equations...

Graphing:

$y = 3x + 4$

$1 = 3(-1)$

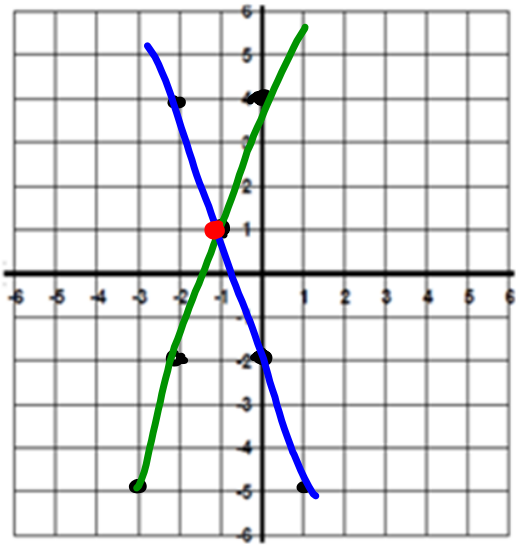
$1 = -3 + 4$ ✓

$(-1, 1)$

$y = -3x - 2$

$1 = -3(-1) - 2$

$1 = 3 - 2$ ✓



Solving systems of equations...

Substitution:

$y = 3x + 4$

$y = -3x - 2$

$3x + 4 = -3x - 2$

$+3x \quad +3x$

$6x + 4 = -2$

$-4 \quad -4$

$\frac{6x}{6} = \frac{-6}{6}$

$x = -1$

$(-1, 1)$

Essential Question

How can you use **elimination** to solve a system of linear equations?

You purchase a drink and a sandwich for $4.50. Your friend purchases a drink and five sandwiches for $16.50. You want to determine the price of a drink and the price of a sandwich.

$x + y = 4.50$

$x + 5y = 16.50$

$\$1.50$ —

x: drink $

y: sandwich $

3$

$-4y = -12$

$\frac{-4y}{-4} = \frac{-12}{-4}$

$y = 3$

$x + 3 = 4.50$

$-3 \quad -3$

$x = 1.50$

$x + 5(3) = 16.50$

$x + 15 = 16.50$

$-15 \quad -15$

$x = 1.50$

Solving systems of equations...

Elimination:

$$\begin{array}{rl} & 3x - y = 6 \\ + & 3x + y = 0 \\ \hline & 6x = 6 \end{array}$$

$\frac{6x}{6} = \frac{6}{6}$

$(1, -3)$

$3(1) + y = 0$

$3 + y = 0$

$-3 \quad -3$

$y = -3$

$$\begin{array}{rl} & 3x - y = 6 \\ - & 3x + y = 0 \\ \hline & -2y = 6 \end{array}$$

$\frac{-2y}{-2} = \frac{6}{-2}$

$y = -3$

Solving systems of equations...

Elimination:

$$2x + y = 6$$
$$+\ -2x + y = -2$$
$$2y = 4$$
$$\frac{2y}{2} = \frac{4}{2}$$

(2, 2)

$2x + (2) = 6$

$-2 \quad -2$

$\frac{2x}{2} = \frac{4}{2}$

$x = 2$

Solving systems of equations...

Elimination:

$3x - 2y = -4$

$3x + 2y = 4$

$3x = -4 + 2y$

$-2y \quad -2y$

$\frac{6x}{6} = \frac{0}{6}$

$x = 0$

$(0, 2)$

$+ \quad 3x - 2y = -4$

$3x + 2y = 4$

$\frac{-4y}{-4} = \frac{-8}{-4}$

$y = 2$

$3x - 2(2) = -4$

$3x - 4 = -4$

$+4 \quad +4$

$\frac{3x}{3} = \frac{0}{3}$

$x = 0$

Solving systems of equations...

Elimination: (3, -4)

$-7x - 2y = -13$

$-(x - 2y = 11)$

$-8x = -24$

$\frac{-8x}{-8} = \frac{-24}{-8}$

$x = 3$

$-7x - 2y = -13$

$-x + 2y = -11$

$-8x = -24$

$3y - 2y = 11$

$-3 \quad -3$

$-2y = 8$

$\frac{-2y}{-2} = \frac{8}{-2}$

$y = -4$

Solving systems of equations...

Elimination:

$4x + 3y = 6$

$x + 3y = -3$

The sum of two numbers is 22. Their difference is 6. What are the two numbers?

x = # 14
y = # 8

$x + y = 22$
$x - y = 6$

$2x = 28$
$x = 14$

Math 1 Honors Name_____

Solving Systems by Elimination - Day 1

Date_____ Hour____

Solve each system by elimination.

1) $-x + 5y = 13$
$x + y = 11$

2) $-4x + 6y = -30$
$-6x - 6y = -30$

3) $5x - 6y = -27$
$-5x + 3y = 6$

4) $9x - 5y = -22$
$-9x + 8y = -8$

5) $3x - y = 27$
$3x - 4y = 18$

6) $-x - 2y = 5$
$-x - y = 7$

7) $-4x - 8y = 20$
$-10x - 8y = 14$

8) $5x - 9y = 7$
$5x + y = -23$

9) $-9y = -7x - 13$
$21y - 21x = 21$

10) $-x - 3y = 11$
$38 + 6y = -10x$

11) $17 + 3x + y = 0$
$11 - 2y = -3x$

12) $2x + 2 = 9y$
$8 = -8x + 9y$

13) $-5x - 10y = -15$
$18 - 5x = 7y$

14) $2 = 4y - 2x$
$4y = -x + 17$