Name_____ Pd____ Date_____ **Section 6.7**

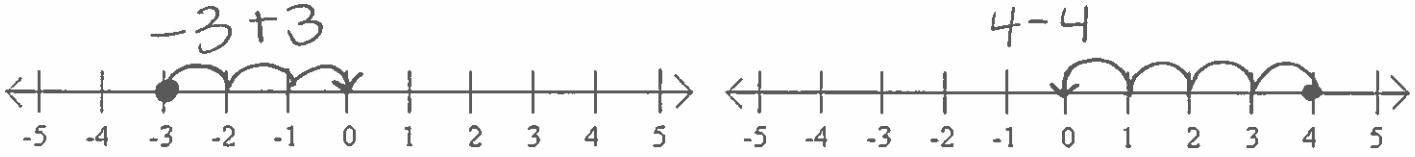
2S8

Solving Systems Algebraically by ELIMINATION

Recall:

The GOAL of elimination is to _____ one variable so that we can _____ for the other.

What must we have in order to do this?



So how can we make this happen?

Steps	Example	Observations - What do you see? What action was taken in order to see what you see?	Why? - What is the significance of your observation? (and/or) Why is the mathematician allowed to do so?
1	$-2x + 15y = -32$ $7x - 5y = 17$		
2	$-2x + 15y = -32$ $3(7x - 5y) = (17)3$		
3	$-2x + 15y = -32$ $21x - 15y = 51$		
4	$-2x + 15y = -32$ $\underline{21x - 15y = 51}$ $19x + 0y = 19$		
5	$\frac{19x}{19} = \frac{19}{19}$ $x = 1$		
6	$-2x + 15y = -32$ $-2(1) + 15y = -32$		
7	$-2(1) + 15y = -32$ $-2 + 15y = -32$ $\underline{+2 \quad = +2}$ $\frac{15y}{15} = \frac{-30}{15}$ $y = -2$ Solution: $(1, -2)$		

Let's Try It!

Steps	Example	Anticipate - Your Own Words	"Formal" Steps
1	$3x - 3y = 6$ $6x + 4y = 42$		Identify which coefficient pair is a factor/multiple pair.
2			Multiply the smaller coefficient by the factor that will make the coefficients additive inverses.
3			Distribute this multiplying factor to BOTH sides of the equation.
4			Add the equations in order to eliminate one variable.
5			Solve for the variable you still have.
6			Substitute the value for the variable you isolated back into one of the original equations. (Does it matter which equation?)
7			Solve this equation for the remaining variable. Write the solution as an ordered pair.

<u>Practice multiplying by a factor that will allow elimination.</u>

1) $2x + 3y = 9$
$x + 5y = 8$

2) $-2x - 9y = -25$
$-4x - 9y = -23$

3) $-3x + 7y = -16$
$-9x + 5y = 16$

Remember, you are multiplying so coefficients of the same variable become _____!