Name_____ Pd____ Date_____ Section 2.4

Solving Systems Algebraically by SUBSTITUTION

Steps	Example	Observations - What do you see? What action was taken in order to see what you see?
1	$6x - 5y = 12$ $y = -2x + 20$	
2	$6x - 5(-2x + 20) = 12$	
3	$6x - 5(-2x + 20) = 12$ $6x + 10x - 100 = 12$ $16x - 100 = 12$	
4	$16x - 100 = 12$ $+100 \quad +100$ $16x + 0 = 112$ $\frac{16x}{16} = \frac{112}{16}$ $x = 7$	
5	$y = -2x + 20$ $y = -2(7) + 20$	
6	$y = -2(7) + 20$ $y = -14 + 20$ $y = 6$ Solution: $(7, 6)$	
7	$6x - 5y = 12$ $6(7) - 5(6) = 12$ $42 - 30 = 12$ $12 = 12$ ✓ $y = -2x + 20$ $6 = -2(7) + 20$ $6 = -14 + 20$ $6 = 6$ ✓	

Key Ideas

- Remember that in systems of equations, both the _____ and _____ values are _____ _____ at the _____.
- So the expression for x or y in one equation is good enough for _____ equations!

Let's Try It!

Steps	Example	Anticipate - Your Own Words	"Formal" Steps
1	$x = 2y - 8$ $4x + y = 13$		Identify the variable that is already isolated.
2			Substitute the given expression into the variable of the other equation.
3			Simplify this equation. (Use distributive property. Combine like terms.)
4			Solve this equation. (Use inverse operations.)
5			Substitute the value for the variable you isolated back in the original equation.
6			Evaluate the original equation. Write the solution as an ordered pair.
7			Check that the solution makes both equations true.