Name _____ Date _____

Mr. Tallman

Lesson #58: Solving Equations with Variables on Both Sides Part One

Consider the following equation: $5x + 12 = 9x - 16$. What do you notice? _____

_____

Example 1) Solve for x: $5x + 12 = 9x - 16$

Steps to solving equations with variables on both sides:

Steps	Example
1) Distribute and Combine like terms on each side of the equal sign. **Never combine like terms across the the equal sign.**	
2) Get all of the variables to one side of the equal sign by either adding or subtracting the variable with the smaller coefficient from both sides.	
3) Get all of the constants to the opposite side by either adding or subtracting from both sides.	
4) Solve the resulting equation.	
5) Check	

2) $2y + 8 = 6y + 20$	3) $19x + 8 - 8x = 20x + 44$
4) $4(2p - 8) - 6p = 20 + 4(p + 6)$	

Now, you try! Solve each equation. You don't have to check.

5) $15x = 10x - 30$	6) $7x + 5 - 2x = 3x - 17$
7) $4(3x - 10) = 10(x - 3)$	8) $\frac{1}{2}(6x + 8) + 3x = 5x + 25$