

Solving Multi-Step Equations

- (1) Dist. Property
- (2) Combine like terms
- (3) Inverse operations

Distrib Prop - Each term on the inside gets mult. by the # on the outside

$$3(2x + 1)$$

$$3 \cdot 2x + 3 \cdot 1$$

$$\boxed{6x + 3}$$

Now you:

$$\underline{\text{Ex:}} \quad 7(4 + 8x)$$

$$\underline{\text{Ex:}} \quad -5(5x - 3)$$

Combine Like Terms - add or subtract terms that have the same variable or non-variable.

$$\underline{9x} - 3 + \underline{x}$$

$$9x + x - 3 = \boxed{10x - 3}$$

Now you:

$$\underline{\text{Ex:}} \quad 2x - 11 + 12x$$

$$\underline{\text{Ex:}} \quad -3x - 13 - 5x + 2$$

Solving:

Dist. Prop and Combine like terms

To Solve: Use inverse operations!

$$\text{Review: } 4x + 1 = 13$$

$$\frac{4x}{4} = \frac{12}{4}$$

$$x = 3$$

Dist. Prop

$$\text{Ex: } 3(5x - 2) = 24$$

$$15x - 6 = 24$$

$$\frac{15x}{15} = \frac{30}{15}$$

$$x = 2$$

Dist. Prop + Combine

$$\text{Ex: } 5 + 2(7x - 1) = 63$$

$$5 + 14x - 2 = 63$$

$$7 + 14x = 63$$

$$\frac{14x}{14} = \frac{56}{14}$$

$$x = 4$$