3.1: Solve 1-step Equations

Goals: *Use inverse operations to solve 1-step equations *Check solutions to 1-step equations

Inverse operations: operations that ______ each other

_____ and _____ are inverse operations

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Solution: the ______ of the variable that makes an equation

Ex: Is x = 2 a solution to x + 4 = 6?

STEPS TO SOLVE AN EQUATION: **GOAL: ISOLATE THE VARIABLE!

- 1. Identify the _____
- 2. Ask: "What's ______ the variable?"
- 3. Ask: "______ is it bothering the variable?"
- 4. Use _______ to undo what is happening to the variable.

**REMEMBER THAT WHATEVER YOU DO TO ONE SIDE YOU MUST DO TO THE OTHER!!

Ex: Solve the equation using the steps provided:

x + 3 = 10

Now we must check to see that our answer is correct:

TO CHECK YOUR ANSWER:

- 1. REWRITE THE _____ PROBLEM
- 2. _____ THE VALUE OF THE VARIABLE YOU ARE CHECKING
- 3. DO OUT WORK ON ______ SIDES _____.

Check your answer for the equation you just solved using the steps above:

x + 3 = 10

Solve and check the following equations:

Ex: x + 7 = 4

Ex: x - 12 = 3

Ex: x + 9 = 3

Ex: x - 2 = 11

Ex: -5x = 10

Ex: -4x = -28

Ex: -65 = -5y

Ex: $\frac{x}{4} = 5$

Ex: $\frac{x}{3} = -7$

Ex: $\frac{t}{-3} = 9$

Ex:
$$6 = \frac{c}{7}$$
 Ex: $13 = \frac{z}{-2}$

Solve the following equations by multiplying by the reciprocal.

Ex:
$$\frac{2}{3}x = 8$$
 Ex: $-\frac{3}{4}a = 9$

Ex:
$$\frac{3}{5}y = 12$$
 Ex: $16 = -\frac{1}{2}x$

Solve the following equations. Be careful about how to isolate the variable.

Ex: 7 - x = 5 **Ex:** -8 = 3 - x

Ex: -1 - x = -10

Ex: -4 = 5 - x