

## Math 7H - Unit 2b

## Day 1 - Add &amp; Subtract One-Step Equations Review

## Lesson Objectives:

- I can solve an one-step equation by adding.
- I can solve an one-step equation by subtracting.
- I know how to show work when solving equations.

**Equation:** A mathematical statement that states two expressions are equal.

**Solution of an Equation:** A value of the variable that makes the equation true.

**Constant:** A value that does not change. (For equations, it is the number on the same side of the equation as the variable).

$$x + 5 = 12$$

(5 is the constant because it is on the same side of the equation as the x or variable)

**Addition Property of Equality:** You can add the same number to both sides of an equation, and the statement will remain true.

$$3 = 3 \rightarrow 3 + 2 = 3 + 2$$

$$a = b \rightarrow a + c = b + c$$

addition prop (=)

**Subtraction Property of Equality:** You can subtract the same number from both sides of an equation, and the statement will remain true.

$$3 = 3 \rightarrow 3 - 2 = 3 - 2$$

$$a = b \rightarrow a - c = b - c$$

subtraction prop (=)

**Inverse Operations:** Operations that "undo" each other.

Addition and

Division and

subtraction  
multiplication

In other words, you must show your work for EVERY problem!!!

Model each equation on your algebra mat. Then sketch a picture in your notes.

$x - 10 = 4$

What is the inverse operation for this equation?

$$\begin{array}{r} x - 10 = 4 \\ +10 \quad +10 \\ \hline x = 14 \end{array}$$

Addition Prop. (=)

Don't forget to check your work!

Model each equation on your algebra mat. Then sketch a picture in your notes.

$x - 8 = -3$

What is the inverse operation for this equation?

$$\begin{array}{r} x - 8 = -3 \\ +8 \quad +8 \\ \hline x = 5 \end{array}$$

Addition Prop. (=)

Don't forget to check your work!

Model each equation on your algebra mat. Then sketch a picture in your notes.

$x + 8 = -3$

What is the inverse operation for this equation?

$$x + 8 = -3$$

$$\underline{-8 \quad -8}$$

$$x = -11$$

Subtraction Prop. (-)

Don't forget to check your work!

Model each equation on your algebra mat. Then sketch a picture in your notes.

$x + 6 = 4$

What is the inverse operation for this equation?

$$x + 6 = 4$$

$$\underline{-6 \quad -6}$$

$$x = -2$$

Subtraction Prop. (-)

Don't forget to check your work!

$$\begin{array}{r} x + 6 = 4 \\ + (-6) + (-6) \\ \hline x = -2 \end{array}$$

Addition Prop. (+)

## Steps for Solving Equations

### Step #1 Get rid of the constant.

(This is also called solving a one-step equation.)

- $n - 4 = 7$   
 $\underline{+4 \quad +4}$   
 $n = 11$  Addition Prop. (+)
- $x - 6 = 15$   
 $\underline{+6 \quad +6}$   
 $x = 21$  Addition Prop. (+)
- $-7 = m - 3$   
 $\underline{+3 \quad +3}$   
 $-4 = m$  Addition Prop. (+)
- $-4 = y - 16$   
 $\underline{+16 \quad +16}$   
 $12 = y$  Addition Prop. (+)
- $n + 4 = 7$   
 $\underline{-4 \quad -4}$   
 $n = 3$  Subtraction Prop. (-)
- $x + 15 = 6$   
 $\underline{-15 \quad -15}$   
 $x = -9$  Subtraction Prop. (-)
- $-7 = m + 3$   
 $\underline{+(-3) \quad +(-3)}$   
 $-10 = m$  Subtraction Prop. (-)
- $-4 = 16 + y$   
 $\underline{-16 \quad -16}$   
 $-20 = y$  Subtraction Prop. (-)

9. In the 2000 presidential election, Indiana had 12 electoral votes. That was 20 votes fewer than the number of electoral votes in Texas. Write and solve an equation to find the number of electoral votes in Texas.

$x = \# \text{ of electoral votes in Texas}$

$$\begin{array}{r} x - 20 = 12 \\ +20 \quad +20 \\ \hline x = 32 \text{ votes} \end{array}$$

Addition Prop. (+)

## Homework

2.4 pg 74 #1-8, 21-25, 37-45

### \* Individual Think Time \*



What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

