Warm-up 8-21 and 8/22

Solve the following equations.

$$1.3t = 24$$

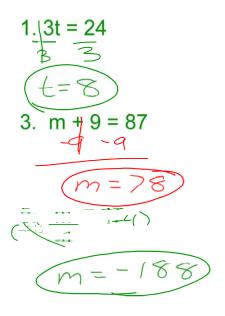
$$2. - 5p = -125$$

3.
$$m + 9 = 87$$

$$4. 4x = 96$$

Warm-up 8-21

Solve the following equations.



2.
$$-5p = -125$$

 $p = 25$
4. $4x = 96$
 $x = 24$

Today's Goals

- Solve 1 step equations
 - using addition, subtraction, multiplication, and division
- Solve 2 step equations
 - using addition, subtraction, multiplication, and division

Evaluation

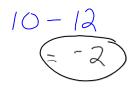
Evaluate: find the equivalent value (solve)

- substitute or simplify an expression
- end up with a number

Evaluate the expressions below for

$$a = 6$$
, $m = 2$, and $r = 5$

2. mr 3. 2r - am 5
$$2(5)$$
 - $6(2)$



Solving Equations ~ to find the values of the variable in the equation, which makes the equation true. The set of values is called a <u>solution set</u>.

ALL SOLUTIONS WILL BE REAL NUMBERS!!!!

The goal is to isolate the variable (get it by itself)

In order to solve equations we have to use specific properties.

Equality Properties

Addition Property

If
$$a = b$$
, then $a + c = b + c$
 $6 + 4 = 4 + 6$
 $6 = 6$

Subtraction Property

If
$$a = b$$
, then $a - c = b - c$
 $-7 + 25 = 25 - 7$
 $|8 = |8$

Multiplication Property

If a = b, then ac = bc

(3)
$$21 = 21(3)$$

63=63

Division Property

If
$$a = b$$
, then $\underline{a} = \underline{b}$
 $c \quad c$
 $\underline{14} = \underline{14}$

Solving Equations

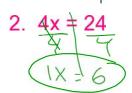
Equations are solved by doing the order of operations in reverse after simplifying. PEMDAS

- 1. Add or subtract
- 2. Multiply or divide

To move a number to the other side of the equal sign, you perform the opposite operation.

Examples:





3.
$$x + 9 = 21$$

 $x = 12$

$$m = 40 (10)$$
 $m = 400$

5.
$$p - 15 = -31$$

 $+15 + 15$
 $p = -16$

More Examples

1.
$$-4x = 10$$

$$2. -x = 25$$

3.
$$x + 13 = 26$$

$$4. -6 + x = 36$$

More Examples

1.
$$\frac{-4x}{-4} = \frac{10}{-4}$$
 $\times = -2.5$

3.
$$x + \frac{13}{2} = \frac{26}{2}$$
 $x + \frac{13}{2} = \frac{26}{2}$
 $x + \frac{13}{2} = \frac{26}{2}$

4.
$$-6 + x = 36$$

 $+6$
 $x = 42$

$$\frac{x}{3} = -51(3)$$

$$4x + 26 = 26$$

$$-26 - 26$$

$$4x = 0$$

$$4x = 0$$

$$x = 0$$

Connect 4

Today's Goals

I can Solve 2-Step Equations

Section 2.3 ~ Multi-Step Equations

Operations Happening in the Problem

DAddition 2 Multiplication -/ ≤ To Solve the Equation

Examples:

1.
$$4 + 7x = 3$$
 $+ 4$
 $- 7x = 7$
 $- 7x = 7$
 $- 7x = 7$

2.
$$\frac{n+2=2}{7-2-2}$$
3. $18=4a+\frac{1}{2}$

$$\frac{1}{2} = \frac{1}{2}$$

3.
$$18 = 4a + 10$$

$$-10 - 10$$

$$8 = 4a + 10$$

$$-10 - 10$$

$$8 = 4a + 10$$

$$-10 - 10$$

$$-10 - 10$$

$$-10 - 10$$

$$-10 - 10$$

$$-10 - 10$$

Try These!!!!

$$5. -3m + 24 = 57$$

Try These!!!!

4. 5t -
$$\frac{2}{4} = -32$$
 $\frac{4}{5} = -30$
 $\frac{5}{5} = -30$

5.
$$-3m + 24 = 57$$
 $-24 - 24$

$$-8m = 33$$

$$-3$$

$$-3$$

Homework

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