

Day 2: Solving Multi-Step Equations

#2

Warm-Up:

1) Evaluate each of the following expressions. Show one step at a time.

a. $3 - 4 + 5 - 6$ $-1 + 5 - 6$ $4 - 6$ -2	b. $3(-4 + 5) - 6$ $3(1) - 6$ $3 - 6$ -3
c. $3 - 4(5 - 6)$ $3 - 4(-1)$ $3 + 4$ 7	d. $-5 + (-5) + (-5)(-5)$ $-5 + -5 + 25$ $-10 + 25$ 15

2) Add parentheses to make the expressions equal *different* values.

a. $(12 \div 4 - 1 + 2)$ $3 - 1 + 2$ $2 + 2$ Value <u>4</u>	b. $12 \div (4 - 1) + 2$ $12 \div 3 + 2$ $4 + 2$ Value <u>6</u>
c. $12 \div (4 - 1 + 2)$ $12 \div (3 + 2)$ $12 \div (5)$ Value <u>2.4</u>	d. $12 \div 4 - (1 + 2)$ $3 - 3$ Value <u>0</u>

Read the examples below.

<p>ONE STEP SUBTRACTION EXAMPLE</p> <p>The Opposite of Subtraction is Addition</p> $x - 120 = 80$ $+120 \quad +120$ $x = 200 \checkmark$ <p>The value which makes the equation true is 200</p>	<p>Multiplication Example</p> <p>The Opposite of Multiplication is Division</p> $3n = 12$ $\frac{3n}{3} = \frac{12}{3}$ $n = 4 \checkmark$ <p>3/3 cancels down to become 1/1 = 1 1n is simply "n"</p> <p>The value which makes the equation true is 4.</p>	<p>One Step Division Example</p> <p>The Opposite of Division is Multiplication.</p> $\frac{k}{2} = 16$ $\frac{k}{2} \times 2 = 16 \times 2$ $k = 32 \checkmark$ <p>k is divided by 2, so we need to multiply both sides by 2 2/2 cancels down to become 1/1 = 1 1k is simply "k"</p> <p>The value which makes the equation true is 32.</p>
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Now, solve these equations for the given variables. Show your steps, like the examples above!

<p>1. $x + 16 = 25$</p> $-16 \quad -16$ $x = 9$	<p>2. $n - 9 = 17$</p> $+9 \quad +9$ $n = 26$
<p>3. $-30 = w + 8$</p> $-8 \quad -8$ $-38 = w$	<p>4. $y + 5 = -13$</p> $-5 \quad -5$ $y = -18$
<p>5. $c - 2.4 = 1.8$</p> $+2.4 \quad +2.4$ $c = 4.2$	<p>6. $\frac{3m}{3} = \frac{33}{3}$</p> $m = 11$
<p>7. $-5b = 45$</p> $\div -5 \quad \div -5$ $b = -9$	<p>8. $-9x = -54$</p> $\div -9 \quad \div -9$ $x = 6$
<p>9. $9\frac{x}{3} = 5 \cdot 3$</p> $x = 15$	<p>10. $2\frac{x}{-2} = 7 \cdot 2$</p> $x = -14$