

Bellwork: 09/05/17

What number makes each equation true?

$3+x=9$ $x=6$

$g-16=8$ $g=24$

$w-6\pi=4\pi$ $w=10\pi$

$6=-\frac{w}{8}$ $w=48$

Corrections

$x = -4$

$9(6x+4) - 3$

$54x + 36 - 3$

$54x + 33$

$-216 + 33$

-183

Distributive Property

$5(3w + 11)$

$15w + 55$

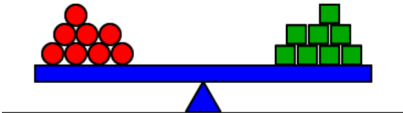
Distributive Property

$7(5 + 6k)$ $9(7 + 11s)$ $3(-7 + 5y)$

$-2(-9 - 7z)$ $12(8 + 3k)$

Welcome to 8th Grade Math!!!!

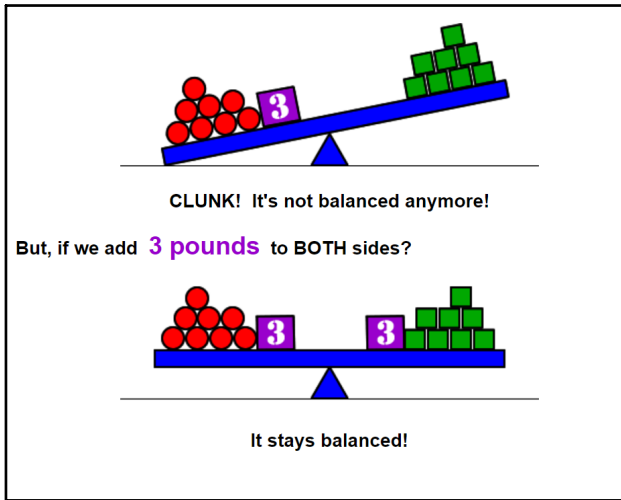
Let's say you've got a see-saw (teeter-totter)... and you've got 50 pounds of stuff piled on each side:



Here's the big Algebra game:

Whatever you do, you've got to keep the see-saw balanced!

What if we add **3 pounds** to the left side?



Equations are just like see-saws...

You have to keep them balanced!

So, whatever you do to one side of the "=" you've got to do to the other side!

You'll see what it's all about in the next few lessons.

Let's start with an easy one:

Solve $x - 3 = 7$

We can just look at it and see that $x = 10$...

But, what if we didn't see that? What would we do?

Here's the Algebra trick:

We'll add 3 to both sides!

$$\begin{array}{r} x - 3 = 7 \\ + 3 + 3 \\ \hline x + 0 = 10 \\ x = 10 \end{array}$$

*Remember the see saw?
Whatever we do to one side of the equation,
we have to do to the other side.

Why did we ADD 3?

$$x - 3 = 7$$

To undo this! + is the opposite of -

The goal is to get the X alone. Just imagine that Mr. X hasn't showered in a few weeks and everyone wants to get away from him. It's your job to help.

Solve the equation. Check your solution.

1. $b + 2 = -5$
 $\frac{-2}{-2} \quad -3$
 $b = -7$

2. $g - 1.7 = -0.9$
 $\frac{+1.7}{+1.7} \quad +1.7$
 $g = 0.8$
 $g = 0.8$

3. $-3 = k + 3$
 $\frac{-3}{-3} \quad -3$
 $k = -6$

We've already learned that we can add or subtract something from both sides of an equation.

So, what if we need to solve something like this?

$$4x = 20$$

(Yep, the answer is 5. I know you can see it...
But, we need to learn the game.)

We need to get the X alone...

$$4x = 20$$

We need to get this 4 out of here...

What's he doing to the **X**? Multiplying!
 What's the opposite of multiplying? Dividing!

So, divide both sides by **4**:

$$\frac{4x}{4} = \frac{20}{4}$$

Here's what's going on with this thing:

$$\frac{4x}{4} = \frac{4}{4}x = 1x = x$$

So, $\frac{4x}{4} = \frac{20}{4}$
 $1x = 5$
 $x = 5$

Hey -- Did you know that you can check these things?

We started with $3x = 7$
 and got $x = \frac{7}{3}$ * Put it back in!

$$3x = 7$$

$$3\left(\frac{7}{3}\right) = 7$$

$$7 = 7 \quad \text{Yep, it works!}$$

Solve the equation. Check your solution.

7. $x + 4 = -7x + 4$
 $y = -28$

8. $6\pi = \pi x$
 $x = 6$

9. $0.09w = 1.8$
 $w = 20$

Find the value of x. Check the reasonableness of your answer.

1.

2.

$$\begin{array}{r} 77 \\ +57 \\ \hline 134 \\ +x \\ \hline 180 \end{array}$$

3.

$$\begin{array}{r} 134 \\ +180 \\ \hline 314 \\ -26 \\ \hline 288 \\ -x \\ \hline 180 \end{array}$$

4.

$$\begin{array}{r} 65 \\ +62 \\ \hline 127 \\ +x \\ \hline 180 \end{array}$$

Pg. 7
 #2, 4, 5, 7-15 all, 16, 18, 19, 20, 22, 24