Solving Multi-Step Equations

What happens when you have an equation that is big and scary and has a whole bunch of stuff going on? How do I handle that?!?!

Don't worry, these are called MULTI-STEP EQUATIONS, and there's a set of steps for these types of problems!

To solve multi-step equations:

1. Use DISTRIBUTIVE PROPERTY , if necessary.
2. Combine any LIKE TERMS .
3. Undo ADDITION and SUBTRACTION .
4. Undo MULTIPLICATION and DIVISION .

Let's work some examples!

Sometimes the problems aren't too scary...

$$3n - 4 = 20$$

How would you solve this equation?
Do you have to use the Distributive Property?
Do you have to add Like Terms?

Click here to go back to the steps!

Other times, they are more difficult...

$$2(5x - 3) = 14$$

How would you solve this equation?
Do you have to use the Distributive Property?
Do you have to add Like Terms?

Click here to go back to the steps!

Still more difficult...

$$38 = -3(4y + 2) + y$$

How would you solve this equation?
Do you have to use the Distributive Property?
Do you have to add Like Terms?

Finding Consecutive Integers

What are consecutive integers?

Consecutive integers are integers that come one after the other, like 1, 2, 3, or -1, 0, 1, 2.

Try writing an equation to find consecutive integers:

The sum of three consecutive integers is 96. Find the integers.

x = 1st integer
$x+1$ = 2nd integer
$x+2$ = 3rd integer

96 total

So, $x + x + 1 + x + 2 = 96$

$3x + 3 = 96$

$-3 \quad -3$

$\frac{3x}{3} = \frac{93}{3}$

$x = 31$

So, the integers are 31, 32, & 33.

What happens when I change the problem this way?

The sum of three consecutive even integers is 96. Find the integers.

How does that change how you do the problem?
Does it change your equation?