

Unit 2 - Solving Equations

Solving equations is a balancing act!



How to keep things balanced...

What you do to one side, you must do to the other!

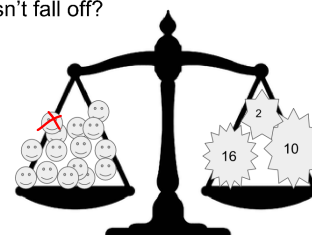
We call these.....

INVERSE OPERATIONS

$+/-$	$-/+$
\times/\div	\div/\times

Inverse operations help keep everything **balanced**.

How can we clean things up on the scale so that stuff doesn't fall off?



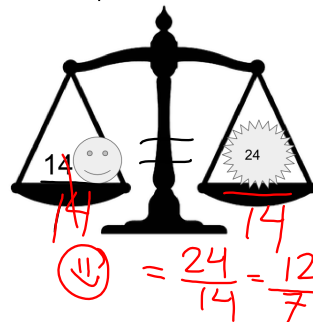
We call this...

COMBINING LIKE TERMS

We can only put things together that belong together.

Variables with variables & free numbers with free numbers

So then we can keep the scale balanced and clean!



$$92 = 92$$

Let's try it together! List the steps as you balance.

$$3(6) + 8 + 11(6) = 18 + 48 + 66$$

$$14x + 8 = 56 + 6x$$

$$14x = 48 + 6x$$

$$\frac{8x}{8} = \frac{48}{8}$$

$$x = 6$$

Combine like terms
 CLT using inverse oper.
 CLT using I.O.
 Inverse operations

Try this problem with your team. Don't forget to list your reasonings! (If your answer is a fraction, don't panic)

$$7p + 10p - 19 = 4p - 10p + 13$$

CLT on SS $17p - 19 = -6p + 13$

CLT on O.S. $23p - 19 = 13$

CLT on O.S. $23p = 32$

I.O. $p = \frac{32}{23}$

What if we have to distribute?

How do I give the 3 to all the parts of the expression?

$$3(2x - 8)$$

Let's try solving this problem together using all our skillz

$$5(f + 3) = 17 + f$$

You try this one with your team!

$$2(5 + 6v) = v + 8(2v - 1)$$

Activity - You are the teacher!

Carefully analyze the 4 problems on your student's quiz. Check their work. If they made a mistake, write a note explaining the mistake they made and show them how to correct it. Be kind and positive!