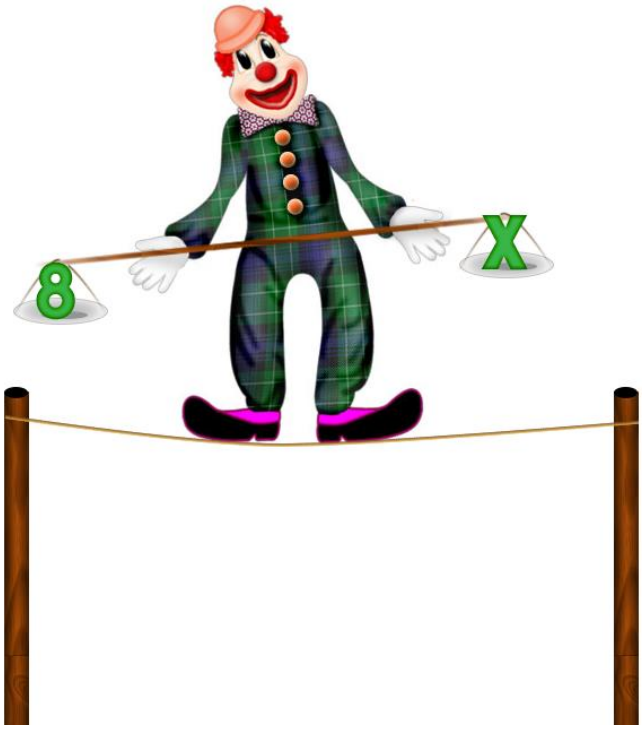
Solving Equations with Addition and Subtraction – A Balancing Act

Equations have to be balanced in order to solve them. Think of a clown up on a high wire. He has a long stick that helps him balance as he walks across the tightrope. However, if we added weight to only one side of that stick, he wouldn't be able to balance himself and would topple over to the side. Any weight added to one side would also need to be added to the other. An equation is the same way. Whatever you do to one side, you must do to the other.



Example

x – 2 = 5

The goal is to get x on one side of the equation, by itself. Since you have – 2, how can you get rid of that and have only x? You add two. So: x – 2 + 2 = x

However, because you added 2 on the right side, you must also add it to the left side.

X – 2 + 2 = 5 + 2

X = 7

You can check your work by inserting your answer into the original equation. In this case, 7-2 does in fact equal 5, so you know you've solved the equation correctly.

Now, you try it. Remember you must keep the equation balanced by doing the same thing to both sides.

1) x + 3 = 8

2) x – 1 = 4

3) x – 0 = 0

4) x + 15 = 20

5) x + 9 = 18

6) x – 100 = 200

Answer Key:

1) x + 3 = 8

X + 3 – 3 = 8 – 3

X = 5

2) x – 1 = 4

x -1 + 1 = 4 + 1

x = 5

3) x – 0 = 0

X – 0 + 0 = 0 + 0

X = 0

4) x + 15 = 20

x + 15 – 15 = 20 - 15

x = 5

5) x + 9 = 18

X + 9 – 9 = 18 – 9

X = 9

6) x – 100 = 200

x – 100 + 100 = 200 + 100

x = 300