

Lesson 3: Solving One-Step Equations

Goals:

- Solve one-step equations.
- Verify the solution to a one-step equation.
- Use a given equation to solve a word problem.

To **solve** an equation means to find the number that makes the equation "true, or, in other words, to make both sides of the equation equal each other. This means, when we substitute the value into the equation, the left hand side equals the right hand side of the equation.

When we solve an equation, we "isolate" the variable (letter) so that it is sitting by itself on one side of the equals sign. We'll practice solving some simple equations:

Solving One-Step Equations using Addition or Subtraction

Example 1

$$x + 2 = 9$$

$$x + 2 \boxed{-2} = 9 \boxed{-2}$$

$$x + 0 = 9 - 2$$

$$x = 7$$

Verify the solution

$$x + 2 = 9, \quad x = 7$$

$$7 + 2 = 9$$

$$9 = 9 \checkmark$$

Example 2

$$x - 12 = 31$$

$$x - 12 \boxed{+12} = 31 \boxed{+12}$$

$$x + 0 = 31 + 12$$

$$x = 43$$

Verify the solution

$$x - 12 = 31, \quad x = 43$$

$$43 - 12 = 31$$

$$31 = 31 \checkmark$$