

Lesson 3-2

Example 1 Solve an Addition Equation

Solve $x + 7 = 10$. Check your solution.

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

Write the equation.
Subtract 7 from each side.
Simplify.

Check $x + 7 = 10$ Write the equation.
 $3 + 7 = 10$ Replace x with 3.
 $10 = 10$ The sentence is true.

The solution is 3.

Example 1 Solve an Addition Equation

Solve $x + 2 = 8$. Check your solution.

$$\begin{array}{r} x + 2 = 8 \\ - 2 = - 2 \\ \hline x = 6 \end{array}$$

Write the equation.
Subtract 2 from each side.
Simplify.

Check $x + 2 = 8$ Write the equation.
 $6 + 2 = 8$ Replace x with 6.
 $8 = 8$ The sentence is true.

The solution is 6.

Example 3 Use an Equation to Solve a Problem

CONSTRUCTION Two types of tiles are being used in a construction project. A slate tile measures 12 inches in length and is 3 inches longer than a granite tile. How long is the granite tile?

Words A slate tile is 3 inches longer than a granite tile.

Variable Let x = the length of the granite tile.

Equation $12 = 3 + x$

$$\begin{array}{r} 12 = 3 + x \\ - 3 = - 3 \\ \hline 9 = x \end{array}$$

Write the equation.
Subtract 3 from each side.
Simplify.

The granite tile is 9 inches long.

Example 4 Solve a Subtraction Equation
Solve $4 = p - 5$. Check your solution.

$$\begin{array}{r} 4 = p - 5 \\ + 5 = \quad + 5 \\ \hline 9 = p \end{array}$$

Write the equation.
Add 5 to each side.
Simplify.

Check $4 = p - 5$ Write the original equation.

$$\begin{array}{r} 4 = 9 - 5 \\ 4 = 4 \quad \checkmark \end{array}$$

Replace p with 9.
This sentence is true.

The solution is 9.

Example 4 Use an Equation to Solve a Problem

GARDENING A tomato plant grew 10 centimeters in four weeks. It grew 1 centimeter, 2 centimeters, and 4 centimeters in the first three weeks after it was planted. How much did the plant grow in the fourth week?

Words The sum of the growth for all four weeks is 10 centimeters.

Variable Let g represent the growth during the fourth week.

	growth for the first three weeks	+	growth for the fourth week	=	total growth
Equation	$1 + 2 + 4$		g		10

$$\begin{array}{r} 1 + 2 + 4 + g = 10 \\ 7 + g = 10 \\ - 7 \quad = - 7 \\ \hline g = 3 \end{array}$$

Write the equation.
 $1 + 2 + 4 = 7$
Subtract 7 from each side.
Simplify.

Check You can check the solution by adding.
 $1 + 2 + 4 + 3 = 10$ ✓

The tomato plant grew 3 centimeters during the fourth week.