

# Solving Addition and Subtraction Equations

You can solve equations by getting the variable alone. You can use inverse relationships and the properties of equality to get the variable alone. Remember that you need to do the same thing to both sides of the equation to keep the equation equal.

Solve the equation  $5.2 + c = 13.6$ .

To get  $c$  alone, undo adding 5.2 by subtracting 5.2 from both sides.

$$\begin{aligned} 5.2 + c &= 13.6 \\ 5.2 + c - \mathbf{5.2} &= 13.6 - \mathbf{5.2} \\ c &= 8.4 \end{aligned}$$

Check your solution by substituting 8.4 for  $c$  in the equation.

$$\begin{aligned} 5.2 + c &= 13.6 \\ 5.2 + 8.4 &= 13.6 \\ 13.6 &= 13.6 \quad \text{It checks.} \end{aligned}$$

Solve the equation  $x - 2.4 = 16.1$ .

To get  $x$  alone, undo subtracting 2.4 by adding 2.4 to both sides.

$$\begin{aligned} x - 2.4 &= 16.1 \\ x - 2.4 + \mathbf{2.4} &= 16.1 + \mathbf{2.4} \\ x &= 18.5 \end{aligned}$$

Check your solution by substituting 18.5 for  $x$  in the equation.

$$\begin{aligned} x - 2.4 &= 16.1 \\ 18.5 - 2.4 &= 16.1 \\ 16.1 &= 16.1 \quad \text{It checks.} \end{aligned}$$

Explain how to get the variable alone in each equation.

1.  $x + 11.4 = 25$   
 $x + 11.4 - \mathbf{11.4} = 25 - \mathbf{11.4}$

\_\_\_\_\_

2.  $n - 19.1 = 12.4$   
 $n - 19.1 + \mathbf{19.1} = 12.4 + \mathbf{19.1}$

\_\_\_\_\_

Solve each equation and check your answer. Show your work.

3.  $g - 21.3 = 48.4$

$$g - 21.3 + \underline{\hspace{2cm}} = 48.4 + \underline{\hspace{2cm}}$$

$$g = \underline{\hspace{4cm}}$$

4.  $y + 7.7 = 21$

5. The Olympic triathlon is 51.5 km. A contestant has completed two of the three legs of the race and has traveled 41.5 km. Solve  $41.5 + d = 51.5$  to find the distance of the third leg.
- \_\_\_\_\_