



Solving Addition Equations

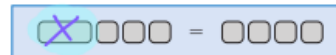
$x + 7,922 = 10,394$

Goal: Solve one-step addition equations.

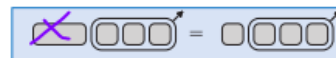
EXAMPLE 1 Solving Equations Using Algebra Tiles

Use algebra tiles to solve $x + 3 = 4$.

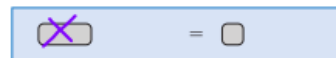
1. Represent the equation using algebra tiles.



2. Take away 3 1-tiles from each side.



3. The remaining tiles show that the value of x is 1.



Answer: The solution is 1.

Your turn now Use algebra tiles to solve the equation.

<p>1. $x + 4 = 7$</p> <p>$x = 3$</p>	<p>2. $5 + x = 6$</p> <p>$x = 1$</p>
<p>3. $x + 3 = 3$</p> <p>$-3 \downarrow -3$</p> <p>$x = 0$</p>	<p>4. $8 + x = 10$</p> <p>$-8 \downarrow -8$</p> <p>$x = 2$</p>

Solving Addition Equations

To solve an addition equation, **subtract** the same number from each side so that the **variable** is by itself on one side.

goal: get the variable alone

EXAMPLE 2 Solving an Addition Equation

Solve the equation $z + 46 = 130$.

After solving an equation, you should always check your solution.

$$\begin{array}{r} z + 46 = 130 \\ -46 \quad -46 \\ \hline z = 84 \end{array}$$

✓ Check $z + 46 = 130$
 $84 + 46 \stackrel{?}{=} 130$
 $130 = 130$ ✓

Write the original equation.
 Subtract from each side.

Simplify.

Write the original equation.
 Substitute 84 for z .
 Solution checks.

EXAMPLE 3 Using an Addition Equation

Working You work at your job in 8 hour shifts. Today, you've worked 3.5 hours so far. How many hours h do you have left to work?

Need help with writing a verbal model? See pages 41 and 42 of your textbook.

Solution

Hours worked so far + remaining hours = 8-hour shift Write a verbal model.

$$\begin{array}{r} 3.5 + h = 8 \\ -3.5 \quad -3.5 \\ \hline h = 4.5 \end{array}$$

Write an equation.
 Subtract 3.5 from each side.
 Simplify.

Answer: You have 4.5 hours left to work.

Your turn now Solve the equation. Then check the solution.

5. $c + 35 = 96$	6. $28 + m = 150$	7. $v + 47 = 83$
8. $z + 3.6 = 12.9$	9. $14.85 + b = 36.95$ -14.85 $b = 22.10$	10. $x + 2.25 = 60.00$ -2.25 $x = 57.75$