Lesson 5-2

Example 1

Solve each equation. Check the solution.

a. $y - 3 = \frac{8}{5}$ **b.** $-6 = m + 8$

Solution

a.
$$y - 3 = \frac{8}{5}$$
$$y - 3 + 3 = \frac{8}{5} + 3 \quad \text{Undo subtraction with addition.}$$
$$y + 0 = \frac{8}{5} + \frac{15}{5} \quad \text{Write with a common denominator.}$$
$$y = \frac{23}{5} \text{ or } 4\frac{3}{5}$$

Check

$$y - 3 = \frac{8}{5}$$
$$\frac{23}{5} - 3 = \frac{8}{5}$$
$$\frac{23}{5} - \frac{15}{5} = \frac{8}{5}$$
$$\frac{8}{5} = \frac{8}{5} \checkmark$$

The solution is correct.

b.
$$-6 = m + 8$$
$$-6 - 8 = m + 8 - 8 \quad \text{Undo addition with subtraction.}$$
$$-14 = m + 0$$
$$-14 = m$$

Check

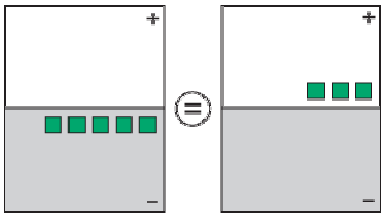
$-6 = m + 8$
$-6 = -14 + 8$
$-6 = -6$ ✓

The solution is correct.

Example 2

a. What equation is modeled on the Sentence Mat?

b. Describe how to solve this equation using Algeblocks.



Solution

a. $x - 5 = 3$

b. Create a zero pair to get the x-block by itself. Do this by adding the opposite of -5, or 5, to both sides of the Sentence Mat. Simplify each side. Read the solution from the Sentence Mat: $x = 8$.

Example 3

FINANCE Preston has a balance of $135.75 in a checking account that does not pay interest. How much will he need to deposit into this account to bring his balance up to $250?

Solution

Let x represent the amount that Preston needs to deposit in his account. Add $135.75 to x. This equals $250, the new balance after the deposit.

$$\begin{aligned} x + 135.75 &= 250.00 \\ x + 135.75 - 135.75 &= 250.00 - 135.75 \\ x &= 114.25 \end{aligned}$$

Preston will need to deposit $114.25.