

1-9**Study Guide and Intervention**

6AF1.1

Solving Addition and Subtraction Equations

You can use the following properties to solve addition and subtraction equations.

- *Addition Property of Equality* — If you add the same number to each side of an equation, the two sides remain equal.
- *Subtraction Property of Equality* — If you subtract the same number from each side of an equation, the two sides remain equal.

Example 1 Solve $w + 19 = 45$. Check your solution.

$$w + 19 = 45$$

Write the equation.

$$w + 19 - 19 = 45 - 19$$

Subtract 19 from each side.

$$w = 26$$

$19 - 19 = 0$ and $45 - 19 = 26$. w is by itself.

Check

$$w + 19 = 45$$

Write the original equation.

$$26 + 19 \stackrel{?}{=} 45$$

Replace w with 26. Is this sentence true?

$$45 = 45 \checkmark$$

$$26 + 19 = 45$$

Example 2 Solve $h - 25 = -76$. Check your solution.

$$h - 25 = -76$$

Write the equation.

$$h - 25 + 25 = -76 + 25$$

Add 25 to each side.

$$h = -51$$

$-25 + 25 = 0$ and $-76 + 25 = -51$. h is by itself.

Check

$$h - 25 = -76$$

Write the original equation.

$$-51 - 25 \stackrel{?}{=} -76$$

Replace h with -51 . Is this sentence true?

$$-76 = -76 \checkmark$$

$$-51 - 25 = -51 + (-25) \text{ or } -76$$

Exercises

Solve each equation. Check your solution.

1. $s - 4 = 12$

2. $d + 2 = 21$

3. $h + 6 = 15$

4. $x + 5 = -8$

5. $b - 10 = -34$

6. $f - 22 = -6$

7. $17 + c = 41$

8. $v - 36 = 25$

9. $y - 29 = -51$

10. $19 = z - 32$

11. $13 + t = -29$

12. $55 = 39 + k$

13. $62 + b = 45$

14. $x - 39 = -65$

15. $-56 = -47 + n$