

SECTION  
6**Ready to Go On? Intervention: Algebra****Lesson 13: Solving Two-Step Equations**

Use two operations to solve a two-step equation. To determine which operation to undo first, use the order of operations in reverse.

**EXAMPLE 1** Solve the equation.

$$2x - 1 = 7$$

$$2x - 1 + 1 = 7 + 1 \quad \text{Add 1 to each side.}$$

$$2x = 8 \quad \text{Simplify.}$$

$$\frac{2x}{2} = \frac{8}{2} \quad \text{Divide each side by 2.}$$

$$x = 4 \quad \text{Simplify.}$$

$$\text{Check: } 2(4) - 1 = 7 \quad \checkmark$$

**HINT**

First, use addition or subtraction. Then, use multiplication or division.

**EXAMPLE 2** Solve the equation.

$$\frac{n}{5} + 2 = 6$$

$$\frac{n}{5} + 2 - 2 = 6 - 2 \quad \text{Subtract 2 from each side.}$$

$$\frac{n}{5} = 4 \quad \text{Simplify.}$$

$$\frac{n}{5} \cdot 5 = 4 \cdot 5 \quad \text{Multiply each side by 5.}$$

$$n = 20 \quad \text{Simplify.}$$

$$\text{Check: } \frac{20}{5} + 2 = 6 \quad \checkmark$$

**HINT**

Remember to check your solution in the original equation.

**Practice: First Try**

**Solve each equation. Check your solution.**

1.  $3y - 4 = 5$

2.  $2a + 5 = 13$

3.  $\frac{m}{4} - 1 = 6$

4.  $\frac{b}{9} - 3 = 1$

5.  $6c - 7 = 11$

6.  $\frac{y}{5} + 12 = 18$

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**Practice: Second Try****Solve each equation. Check your solution.**

1.  $8s - 10 = 6$

2.  $\frac{a}{3} + 5 = 9$

3.  $\frac{h}{8} + 2 = 6$

4.  $4t - 9 = 3$

5.  $\frac{x}{5} - 5 = 3$

6.  $9g + 1 = 82$

7.  $\frac{k}{6} - 2 = 2$

8.  $\frac{w}{2} + 3 = 10$

9.  $5x + 3 = 33$

10.  $10p + 7 = 17$

11.  $6c - 7 = 11$

12.  $\frac{z}{7} - 3 = 4$

13.  $2j - 5 = 23$

14.  $\frac{a}{3} + 8 = 9$

15.  $4m + 12 = 16$

**Extend Your Skills**

16. Miriam is going to the county fair. Each ride ticket costs \$2, and admission costs \$7. Miriam has \$25 to spend at the fair. Write and solve an equation to determine how many ride tickets  $t$  Miriam can buy.

**Puzzle**

Solve each equation. Then assign letters to the answers according to the code  
A = 1, B = 2, C = 3, etc. Unscramble the letters to reveal a word.

$2x - 18 = 34$      $\frac{x}{3} - 6 = 1$      $7x + 5 = 40$      $3x - 11 = 25$      $\frac{x}{2} + 7 = 20$      $\frac{x}{4} + 2 = 6$

$x = \underline{\hspace{2cm}}$      $x = \underline{\hspace{2cm}}$      $x = \underline{\hspace{2cm}}$      $x = \underline{\hspace{2cm}}$      $x = \underline{\hspace{2cm}}$      $x = \underline{\hspace{2cm}}$

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