

3-4 Study Guide and Intervention
Solving Multi-Step Equations

Solve Multi-Step Equations To solve equations with more than one operation, often called **multi-step equations**, undo operations by working backward. Reverse the usual order of operations as you work.

ExampleSolve $5x + 3 = 23$.

$$5x + 3 = 23$$

Original equation.

$$5x + 3 - 3 = 23 - 3$$

Subtract 3 from each side.

$$5x = 20$$

Simplify.

$$\frac{5x}{5} = \frac{20}{5}$$

Divide each side by 5.

$$x = 4$$

Simplify.

CK

$$\begin{array}{rcl} 5x + 3 & \stackrel{?}{=} & 23 \\ 5(4) + 3 & \stackrel{?}{=} & 23 \\ 20 + 3 & \stackrel{?}{=} & 23 \\ 23 & \stackrel{?}{=} & 23 \quad \checkmark \end{array}$$

Exercises

Solve each equation. Then check your solution.

1. $5x + 2 = 27$

2. $6x + 9 = 27$

3. $5x + 16 = 51$

4. $14n - 8 = 34$

5. $0.6x - 1.5 = 1.8$

6. $\frac{7}{8}p - 4 = 10$

7. $16 = \frac{d - 12}{14}$

8. $8 + \frac{3n}{12} = 13$

9. $\frac{g}{-5} + 3 = -13$

10. $\frac{4b + 8}{-2} = 10$

11. $0.2x - 8 = -2$

12. $3.2y - 1.8 = 3$

13. $-4 = \frac{7x - (-1)}{-8}$

14. $8 = -12 + \frac{k}{-4}$

15. $0 = 10y - 40$

-
- ALL WORK ON LOOSELEAF
 - Checks ARE WORTH 50% EACH! Do them!!
- ✓