**LESSON
2-2**

Solving Absolute Value Equations

Reteach

There are three steps in solving an absolute-value equation.

Solve $|x - 3| + 4 = 8$.

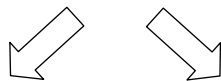**Step 1:** Isolate the absolute-value expression.

$|x - 3| + 4 = 8$

$\underline{ -4 \quad -4}$ *Subtract 4 from both sides.*

$|x - 3| = 4$

Step 2: Rewrite the equation as two cases.

$|x - 3| = 4$

Case 1   **Case 2**

Step 3: $x - 3 = -4$ $x - 3 = 4$

Solve. $\underline{+3 \quad +3}$ $\underline{+3 \quad +3}$ *Add 3 to both sides.*

$x = -1$ $x = 7$

The solutions are −1 and 7.

Solve each equation.

1. $|x - 2| - 3 = 5$

2. $|x + 7| + 2 = 10$

3. $4|x - 5| = 20$

4. $|2x| + 1 = 7$