

## Algebra 1 2.4

Solve equations with the variable on each side.

Solve equations with grouping symbols.

identity  
no solution  
all real numbers

Algebra tiles

$$3x + 5 = 2x + 4$$

### Example 1 Solve an Equation with Variables on Each Side

Solve  $2 + 5k = 3k - 6$ . Check your solution.

Solve each equation. Check your solution.

**1A.**  $3w + 2 = 7w$

**1B.**  $5a + 2 = 6 - 7a$

**1C.**  $\frac{x}{2} + 1 = \frac{1}{4}x - 6$

**1D.**  $1.3c = 3.3c + 2.8$

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

**2A.**  $8s - 10 = 3(6 - 2s)$

**2B.**  $7(n - 1) = -2(3 + n)$

**Example 3** Find Special Solutions

Solve each equation.

a.  $5x + 5 = 3(5x - 4) - 10x$

b.  $3(2b - 1) - 7 = 6b - 10$

$$\mathbf{3A.} \ 7x + 5(x - 1) = -5 + 12x$$

$$\mathbf{3B.} \ 6(y - 5) = 2(10 + 3y)$$

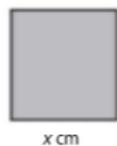
### ConceptSummary Steps for Solving Equations



- Step 1** Simplify the expressions on each side. Use the Distributive Property as needed.
- Step 2** Use the Addition and/or Subtraction Properties of Equality to get the variables on one side and the numbers without variables on the other side. Simplify.
- Step 3** Use the Multiplication or Division Property of Equality to solve.

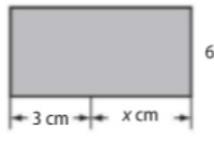
**Standardized Test Example 4** Write an Equation

Find the value of  $x$  so that the figures have the same area.



10 cm

$x$  cm



6 cm

3 cm  $x$  cm

A 3

B 4.5

C 6.5

D 7