

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

3A. $7x + 5(x - 1) = -5 + 12x$

3B. $6(y - 5) = 2(10 + 3y)$

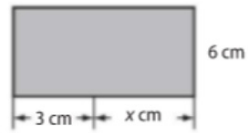
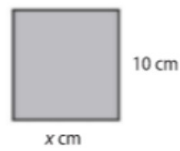
ConceptSummary Steps for Solving Equations



- 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.



A 3

B 4.5

C 6.5

D 7