

SECTION

1B

Ready to Go On? Skills Intervention**1-11 Solving Equations by Multiplying**

Multiplication is the inverse of division. To solve an equation that contains division, you can use multiplication to “undo” the division.

Solving Equations by Multiplying

Solve the equation. Check your answer.

A. $\frac{y}{6} = 3$

$\frac{y}{6} = 3$

_____ $\cdot \frac{y}{6} = 3 \cdot$ _____

$y =$ _____

Check: $\frac{y}{6} = 3$

$\frac{\quad}{6} \stackrel{?}{=} 3$

$3 \stackrel{?}{=} 3$

What number is y divided by? _____

What operation will you perform to “undo” the division? _____

Multiply.

What number will you substitute into the equation for y ?

Are the two numbers equal? _____
_____ is the solution.

B. The area of John’s bedroom is one-sixteenth the area of his house. The area of his bedroom is 75 square feet. Let h represent the area of his house. Find the area of John’s house.

$\frac{h}{16} = 75$

Set up an equation.

$\frac{h}{16} = 75$

What number is h divided by? _____

_____ $\cdot \frac{h}{16} = 75 \cdot$ _____

What number will you divide each side by to “undo” the division? _____

$h =$ _____

Multiply.

Check: $\frac{h}{16} = 75$

$\frac{\quad}{16} \stackrel{?}{=} 75$

What number will you substitute into the equation for h ?

$75 \stackrel{?}{=} 75$

Are the two numbers equal? _____

The solution is _____.

The area of John’s house is _____ square feet.

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Ready to Go On? Problem Solving Intervention**1-11 Solving Equations by Multiplying**

Sometimes you can use a multiplication and a division equation to solve a single problem.

You baked a carrot cake. If you cut the cake into 12 equal pieces, each piece would weigh 6 ounces. If you cut the cake into 18 pieces, how much would each piece weigh?

Understand the Problem

1. What information do you know?

2. What are you supposed to figure out?

Make a Plan

3. If you knew the weight in ounces w of the cake, what equation could you solve to find the weight in ounces p of each of the 18 pieces?

4. How can you find the total weight w of the cake?

Solve

5. What is the weight of the cake? _____

6. Use that value of w in the equation you wrote for question 3. What is the answer to the problem?

Check

7. Why does it make sense that the answer is less than 6 ounces?

Solve the problem.

8. This weekend you plan to spend six 20-minute sessions doing homework. If you break up that same total time into 4 equal sessions instead of 6, how long will each session be?
