

## 2.7 Multiplication Equations

Pg. 81

3-20-18

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Division is the inverse of multiplication. To solve an equation that contains multiplication, use division to "undo" the multiplication.

$$4m = 32$$

$$\frac{4m}{4} = \frac{32}{4}$$

$$m = 8$$

**Caution!**

4m means "4 × m."

division

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Solve the equation. Check your answer.

$$5p = 75 \quad p \text{ is multiplied by } 5.$$

$$\frac{5p}{5} = \frac{75}{5} \quad \text{Divide both sides by } 5 \text{ to undo the multiplication.}$$

$$p = 15$$

**Check**  $5p = 75$ 

$$5(15) \stackrel{?}{=} 75 \quad \text{Substitute } 15 \text{ for } p \text{ in the equation.}$$

$$75 \stackrel{?}{=} 75 \checkmark \quad 15 \text{ is the solution.}$$

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Solve the equation. Check your answer.

$$16 = 8r \quad r \text{ is multiplied by } 8.$$

$$\frac{8r}{8} = \frac{16}{8}$$

$$r = 2$$

$$\checkmark: 8 \cdot 2 = 16$$

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Solve the equation. Check your answer.

$$5p = 75 \quad p \text{ is multiplied by } 5.$$

$$\frac{5p}{5} = \frac{75}{5}$$

$$p = 15$$

$$\checkmark: 5 \cdot 15 = 75$$

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Solve the equation. Check your answer.

$$8a = 72 \quad a \text{ is multiplied by } 8.$$

$$\frac{8a}{8} = \frac{72}{8}$$

$$a = 9$$

$$\checkmark: 8 \cdot 9 = 72$$

$$8 \times 9 = 72$$

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Solve the equation. Check your answer.

$$\frac{18}{3} = \frac{3w}{3} \quad w \text{ is multiplied by } 3.$$

$$w = 6$$

$$\checkmark: 3 \cdot 6 = 18$$

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Solve each equation. Check your answers.

**A**  $3x = 12$

$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

$$\checkmark: 3 \cdot 4 = 12$$

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**B**  $8 = 4w$

$$\frac{4w}{4} = \frac{8}{4}$$

$$w = 2$$

$$\checkmark: 2 \cdot 4 = 8$$

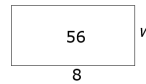
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The area of a rectangle is 56 square inches. Its length is 8 inches. What is its width?

- The area of the rectangle is 56 square inches.
- The length of the rectangle is 8 inches.

Draw a diagram to represent this information.



$$A = l \cdot w$$

$$\frac{56}{8} = \frac{8w}{8}$$

$$w = 7 \text{ in}$$

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**Lesson Quiz**

1.  $10y = 300$

$$\textcircled{1} \frac{10y}{10} = \frac{300}{10}$$

$$y = 30$$

2.  $2y = 82$

3.  $63 = 9y$

$$\textcircled{3} \frac{63}{9} = \frac{9y}{9}$$

$$y = 7$$

4.  $78 = 13x$

5. The area of a board game is 468 square inches. Its width is 18 inches. What is the length?

$$\textcircled{2} \frac{2y}{2} = \frac{82}{2}$$

$$y = 41$$

$$\textcircled{4} \frac{78}{13} = \frac{13x}{13}$$

$$x = 5$$

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