

7-4**Study Guide and Intervention****Algebra: The Percent Equation**

To solve any type of percent problem, you can use the **percent equation**, $\text{part} = \text{percent} \cdot \text{base}$, where the percent is written as a decimal.

Example 1 600 is what percent of 750?

600 is the part and 750 is the whole. Let n represent the percent.

$$\text{part} = \text{percent} \cdot \text{whole}$$

$$600 = n \cdot 750 \quad \text{Write an equation.}$$

$$\frac{600}{750} = \frac{750n}{750} \quad \text{Divide each side by 750.}$$

$$0.8 = n \quad \text{Simplify.}$$

$$80\% = n \quad \text{Write 0.8 as a percent.}$$

So, 600 is 80% of 750.

Example 2 45 is 90% of what number?

45 is the part and 90% or 0.9 is the percent. Let n represent the whole.

$$\text{part} = \text{percent} \cdot \text{whole}$$

$$45 = 0.9 \cdot n \quad \text{Write an equation.}$$

$$\frac{45}{0.9} = \frac{0.9n}{0.9} \quad \text{Divide each side by 0.9.}$$

$$50 = n \quad \text{The whole is 50.}$$

So, 45 is 90% of 50.

Exercises

Write an equation for each problem. Then solve. Round to the nearest tenth if necessary.

1. What percent of 56 is 14?

$$14 = n \cdot 56; 25\%$$

2. 36 is what percent of 40?

$$36 = n \cdot 40; 90\%$$

3. 80 is 40% of what number?

$$80 = 0.4 \cdot n; 200$$

4. 65% of what number is 78?

$$78 = 0.65 \cdot n; 120$$

5. What percent of 2,000 is 8?

$$8 = n \cdot 2,000; 0.4\%$$

6. What is 110% of 80?

$$n = 1.1 \cdot 80; 88$$

7. 85 is what percent of 170?

$$85 = n \cdot 170; 50\%$$

8. Find 30% of 70.

$$n = 0.3 \cdot 70; 21$$