

# **The Percent Proportion**

Lesson 6-3

# Solving Percent Problems

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- A lot of percent problems turn out to be easy to solve when you give them a little thought.
- In many cases, just remember the connection between percents and fractions and you're halfway home.

# **Types of Percent Problems**

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- What number is 75% of 4?
- 3 is what percent of 4?
- 75% of what number is 3?

# Percent Proportion

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**Part:** the number with the word *is*.

**Whole:** the number with the word *of*.

# Percent Proportion

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$$\frac{\text{Part}(is)}{\text{Whole}(of)} = \frac{\%}{100}$$

Example 1: Finding a Percent

**What percent of 15 is 12?**

$$\frac{12}{15} = \frac{x}{100}$$

Cross Multiply

$$15x = 1200$$


Solve for the variable

$$\frac{15x}{15} = \frac{1200}{15}$$

Simplify

$$x = 80$$

Solution

 So, 80% of 15 is 12.



# Percent Proportion

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Example 2: Finding a Part

**What number is 36% of 50?**

$$\frac{x}{50} = \frac{36}{100}$$

Cross Multiply

$$100x = 1800$$

Solve for the variable

$$\frac{100x}{100} = \frac{1800}{100}$$

Simplify

$$x = 18$$

Solution

 So, 18 is 36% of 50.

# Percent Proportion

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$$\frac{\text{Part}(is)}{\text{Whole}(of)} = \frac{\%}{100}$$

Example 3: Finding a Whole

**150% of what number is 24?**

$$\frac{24}{x} = \frac{150}{100}$$

Cross Multiply

$$150x = 2400$$

Solve for the variable

$$\frac{150x}{150} = \frac{2400}{150}$$

Simplify

$$x = 16$$

Solution

 So, 150% of 16 is 24.

# On Your Own

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**Write and solve a proportion to answer the question.**

1. What percent of 5 is 3? **60%**

$$\frac{3}{5} = \frac{p}{100}$$

$$5p = 300$$

2. 25 is what percent of 20? **125%**

$$\frac{25}{20} = \frac{p}{100}$$

$$20p = 2500$$

3. What number is 80% of 60? **48**

$$\frac{x}{60} = \frac{80}{100}$$

$$100x = 4800$$

4. 10% of 40.5 is what number? **4.05**

$$\frac{x}{40.5} = \frac{10}{100}$$

$$100x = 405$$

5. 0.1% of what number is 4? **4,000**

$$\frac{4}{x} = \frac{0.1}{100}$$

$$0.1x = 400$$