Unit 8 Objective 7 Remediation
Solve Problems Involving Percents

Methods Used for Solving Equations Containing Percents:

Example 1: Using Decimal Equivalents to Find Percents of Numbers

a. Write the percent as a decimal.
b. Multiply.

***Helpful Hint:** When solving problems with percents, *of* usually means "times."

Example: 48% of 200

$0.48 \cdot 200$

96

Example 2: Using Equations to Solve Problems with Percents

a. Write an equation.
b. Solve the equation.

***Note:** The equation is related to the proportion.

Example: 60 is what percent of 400?

$60 = n \cdot 400$

$\frac{60}{400} = \frac{400n}{400}$

$0.15 = n$

$15\% = n$

$n = 15\%$

Example: 13 is 25% of what number?

$13 = 0.25 \cdot n$

$\frac{13}{0.25} = \frac{0.25n}{0.25}$

$52 = n$

$n = 52$

Example 3: Using Proportions to Solve Problems with Percents

a. Write a proportion.
b. Solve the proportion by cross multiplying and then solving for the variable.

***Note:** When using a proportion to solve, be sure you are comparing the part to the whole in both ratios.

$$\frac{\boldsymbol{Part}}{\boldsymbol{Whole}} = \frac{\boldsymbol{Part}}{\boldsymbol{Whole}} \quad ; \quad \frac{\%}{\mathbf{100}} = \frac{\boldsymbol{is}}{\boldsymbol{of}}$$

Remember: Identify what you are given in a problem and what you want to find before you begin working on it.

Helpful Hint: When solving a problem with a percent greater than 100%, the part will be greater than the whole.

Example: 25% of 64

$$\frac{25}{100} = \frac{n}{64}$$

$$\frac{100n}{100} = \frac{1600}{100}$$

n = 16

Example: 60 is what percent of 150

$$\frac{n}{100} = \frac{60}{150}$$

$$\frac{150n}{150} = \frac{6000}{150}$$

n = 40%

Example: 9 is 15% of what number

$$\frac{15}{100} = \frac{9}{n}$$

$$\frac{15n}{15} = \frac{900}{15}$$

n = 60

PERCENT OF CHANGE: Solve percent of change problems using either method below.

Method 1: $\frac{\%}{100} = \frac{amount\ of\ change}{original\ amount}$ OR Method 2: $\frac{amount\ of\ change\ (from-to)}{original\ amount\ (from)}\ x\ 100$

Example: The regular price of a bicycle helmet is $43.00. It's being sold for $34.40. What is the percent of decrease.

Try Some!

Solve each problem. Round to the nearest tenth or tenth of a percent.

1. What percent of 29 is 3?
2. What percent of 33.5 is 21?
3. What percent of 55 is 34?
4. 41% of 78 is what?
5. 28% of 63 is what?
6. 58% of what is 63.4?
7. 1 is what percent of 52.6?
8. What percent of 38 is 15?
9. 4% of 73 is what?
10. What is 12% of 17.5?