

Content and Language Objective:

Students will work with a variety of percent word problems and be able to determine the proper method to use to solve each problem.

Warm-Up

1. What is 63% of 752?

$$\frac{63}{100} \times \frac{x}{752} \quad \frac{752 \cdot 63}{100} = x = 473.76$$

2. 76 is 14% of what?

$$\frac{76}{x} \times \frac{14}{100} \quad \frac{7600}{14} = x = 542.86$$

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Sometimes when dealing with percentages, you have to find the **PERCENT CHANGE**.

The **PERCENT CHANGE** compares old values to new values.

% increase or % decrease

When you are given the information you subtract the old from the new, then divide by the old value, then multiply by 100 to put it in percent form.

$$\frac{\text{NEW VALUE} - \text{OLD VALUE}}{\text{OLD VALUE}} \bullet 100$$

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There were 160 smarties in the box yesterday, but now there are 116, what is the percentage change?

New- 116

Old- 160

$$\frac{\text{new} - \text{old}}{\text{old}} \cdot 100$$

$$\frac{116 - 160}{160} \cdot 100 = \frac{-44}{160} \cdot 100$$

$$= -0.275 \cdot 100$$

$$= -27.5\%$$

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You bought a new car for \$15,525, the value of the car after owning it for 5 years is \$11,625. What is the percent change?

$$\frac{11,625 - 15,525}{15,525} \cdot 100 = \frac{-3,900}{15,525} \cdot 100 =$$
$$-0.251 \cdot 100 =$$
$$-25.1\%$$

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EXAMPLES OF NON-PERCENT PROPORTIONS.

The Crayola Crayon Company can make 2400 crayons in 4 minutes. How many crayons can they make in 45 minutes?

$$\frac{2400 \text{ crayons}}{4 \text{ min}} = \frac{x \text{ crayons}}{45 \text{ min}}$$

$$\frac{45 \cdot 2400}{4} = x = 108,000 \text{ crayons can be produced in 45 minutes}$$

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A typist can type 120 words in 100 seconds. At that rate, how many seconds would it take her to type 1214 words?

$$\begin{array}{r} 1011 \\ 120 \overline{) 121400} \\ \underline{120} \\ 140 \\ \underline{120} \\ 200 \end{array}$$

$$\frac{120w}{100sec} = \frac{1214w}{x}$$

$$\frac{1214 \cdot 100}{120} = x = \frac{121400}{120} = 1011.6$$

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There are 28 students in a class. Sixteen of those students are men. What percent of the class are women?

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Donovan took a math test and got 35 correct and 10 incorrect. What was the percentage of correct answers?

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