

4-4

NAME _____ DATE _____

Percents (Pages 215–221)

A **percent** is a ratio that compares a number to 100. Percent means *per hundred*, or *hundredths*. You can express a percent with the percent symbol (%), as a fraction, or as a decimal.

Percent Proportion	$\frac{\text{Percentage}}{\text{Base}} = \text{Rate}$ or $\frac{\text{Percentage}}{\text{Base}} = \frac{r}{100}$
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You can also write equations to solve problems with percents. To do this, translate percents as decimals, the word “of” as multiplication, the phrase “what number” as x , and the word “is” as an equal sign. Then, solve for x .

EXAMPLES

- A** Write $\frac{3}{8}$ as a percent and then as a decimal.

$$\frac{3}{8} = \frac{n}{100} \quad \text{Use a proportion.}$$

$$300 = 8n \quad \text{Find cross products}$$

$$37.5 = n \quad \text{Divide each side by 8.}$$

So $\frac{3}{8}$ is equal to $\frac{37.5}{100}$ or 37.5%.

Percent \rightarrow Decimal: Move decimal point left two places and drop % symbol.

$$37.5\% = 0.375$$

- B** 20 is what percent of 77?

Use the percent proportion and solve for r . The amount following the word “of” is usually the base.

$$\frac{\text{Percentage}}{\text{Base}} = \text{Rate}$$

$$\frac{20}{77} = \text{Rate}$$

$$0.26 \approx \text{Rate}$$

Decimal \rightarrow Percent: Move decimal point right two places and add % symbol.

$$\text{Rate} \approx 0.26 \text{ or about } 26\%$$

PRACTICE

Write each ratio as a percent and then as a decimal.

1. $\frac{5}{50}$

2. $\frac{9}{24}$

3. $\frac{35}{40}$

4. $\frac{3}{10}$

5. $\frac{12}{10}$

Use a proportion or an equation to answer each question.

6. Twelve is what percent of 30? 7. Ten is what percent of 5?
 8. What percent of 75 is 50? 9. \$5.60 is what percent of \$8.00?
 10. What is 50% of 48? 11. What percent of 40 is 100?
 12. 30 is 75% of what number? 13. 24 is 120% of what number?



14. **Standardized Test Practice** How much will you save on a stereo that is marked down 30% if it is normally priced at \$299.99?

A \$210.00

B \$90.00

C \$9.00

D \$8.99

Answers: 1. 10%, 0.1 2. 37.5%, 0.375 3. 87.5%, 0.875 4. 30%, 0.3 5. 120%, 1.2 6. 40% 7. 200% 8. 66 $\frac{2}{3}$ % 9. 70%
 10. 24 11. 250% 12. 40 13. 20 14. B