Section 7.4:   Percents

- **Percents**: "per hundred"

$$34\% = 34 \text{ per } 100, \qquad \frac{34}{100} = .34$$

NOTE: percents are alternative representations of fractions and decimals. Therefore, we should be able to convert between them.

- **Converting percents to fractions**: remember percents means "per hundred".

$$42\% = \frac{42}{100}$$

- **Converting percents to decimals**: Move the decimal place two places to the left.

$$42\% = .42$$

- **Converting decimals to percents**: Move the decimal place two places to the right.

$$.365 = 36.5\%$$

- **Converting fractions to percents**: One method is to rewrite as an equivalent fraction with 100 in the denominator. The other method is to divide the numerator by the denominator and convert to a percentage.

$$\frac{1}{5} = \frac{20}{100} = .20$$

Examples:

1. 48% of what number is 178?

2. What percent of 2.5 is 5.2?

3. 6 is $\frac{1}{4}$% of what number?

4. A mathematics test had 80 questions, each worth the same value. Wendy was correct of 55 of the questions. What percent of the questions did she get correct?

5. A retailer sells a shirt for $21.95. If the retailer marked up the shirt about 70%, what was his cost for the shirt?

6. Frank's salary is $240 per week. He saves $28 a week. What percent of his salary does he save?

7. In a class of 36 students, 13 were absent on Friday. What percent of the class was absent?

8. A volleyball team wins 105 games, which is 70% of the games played. How many games were played?

9. A refrigerator and range were purchased and a 5% sales tax was added to the purchase price. If the total bill was $834.75, how much did the refrigerator and range cost?

10. A programmable coffee pot is on sale for 25% off the original price. If the sale price is $32.95, what is the original price of the coffee pot ? (Round to two decimal places)

11. A new 10 piece cookware set sells for $348. This weekend it is on sale for 35% off. What is the sale price of the cookware (before tax)? (Round answer to two decimal places.)

12. The life expectancy for a newborn child in the U.S. increased from 73.7 years in 1980 to 78.3 years in 2010. What is the percent increase for this time period? Round answer to the nearest tenth of a percent.

13. Last year, 16,528 students attended City Community College. This year, enrollment increased by 3.2%. How many students attend City Community College this year? Round answer to the nearest whole student.

14. Prior to reorganization in 2010, General Motors (GM) had 91,000 U.S. employees. After the reorganization, GM had 68,500 U.S. employees. By what percent did the number of U.S. employees decrease?

15. Following an investigation into finance fraud, a daycare center's enrollment decreased by 30% to 56 students. What was the daycare center's enrollment before the investigation?