Section 7.1 Percents, Decimals, and Fractions

1. Meaning of Percent: "Percent" means per hundred. The symbol for percent is "%".

Example 1: Express each of the following as a fraction in lowest terms.
   a. 42%
   b. 35.4%
   c. $12\frac{1}{2}\%$

Example 2: Express each of the following as a percent.
   a. $\frac{33}{100}$
   b. $\frac{7}{20}$

2. Changing Percents to Decimals: To change a percent to a decimal, use the meaning of percent, that is: percent means per hundred. A shortcut method is to drop the percent sign and move the decimal two places to the left.

Example 3. Change each percent to a decimal:
   a. $50\% = \frac{50}{100} = 0.50$
   b. $2.345\%$
   c. $3\%$
   d. $0.21\%$
3. **Changing Decimals to Percents:** To change a decimal to a percent, move the decimal two places to the right and place the % sign after the number.

   Example 4: Change each decimal to a percent:
   
   a. \(0.48 = 0.48(100\%) = 48\%\)
   
   b. \(2.5\)
   
   c. \(0.92\)
   
   d. \(2.36\)

4. **Changing Percents to Fractions:** To change a percent to a fraction, write the number before the % sign as the numerator of the fraction, the number 100 as the denominator of the fraction, drop the % sign, and then reduce or simplify as needed.

   Example 5: Change the given percents to fractions.
   
   a. \(50\% = \frac{50}{100} = \frac{1}{2}\)
   
   b. \(37.5\%\)
   
   c. \(5\frac{1}{3}\%\)

5. **Changing Fractions to Percents:** To change a fraction to a percent, first change the fraction to a decimal, and then change the decimal to a percent.
Example 6: Change each fraction to a percent:

a. \( \frac{7}{10} = 0.7 = 70\% \)

b. \( \frac{3}{8} \)

c. \( 2\frac{1}{2} \)

d. \( 4\frac{1}{7} \) (Round to the nearest tenth of a percent)

6. **Meaning of 100%**: Since 100% equals \( \frac{100}{100} \) which is equal to 1, we know that 100% is equal to 1.

Example 7: What whole number is 200% equal to?
Practice Problems
Express each of the following as a fraction with a denominator of one hundred. Simplify all answers.
a. 58%

b. 25.2%

c. $37\frac{1}{2}\%$

d. Express as a percent. $\frac{4}{25}$

Change each percent to a decimal:
e. 5%
f. 6.8%
g. 0.31%

Change each percent to a fraction in simplified reduced form.
h. 38%
i. $6\frac{1}{2}\%$

Change each fraction to a percent. Give an exact answer unless otherwise directed.
j. $4\frac{3}{4}$
k. $\frac{4}{7}$ Round your answer to four decimal places.
l. What whole number is represented by 300%?

Answers to Practice Problems
a. $\frac{29}{50}$; b. $\frac{63}{250}$; c. $\frac{3}{8}$; d. 16%; e. .05; f. 0.068; g. 0.0031
h. $\frac{19}{50}$; i. $\frac{13}{200}$; j. 475%; k. 57.1429%; l. 3

Note: Portions of this document are excerpted from the textbook *Prealgebra*, 6th ed. by Charles McKeague