

# Section Overview

## Fractions, Decimals, and Percents

Lessons 6-1, 6-2, 6-3

**Why?** When you are solving problems or making mental calculations it can be helpful to write a fraction, decimal, or percent in an equivalent form.

Writing Equivalent Forms	
<b>From Decimal to Percent</b>	$0.86 = \frac{86}{100} = 86\%$
<b>From Percent to Decimal</b>	$23\% = \frac{23}{100} = 0.23$
<b>From Percent to Fraction</b>	$45\% = \frac{45}{100} = \frac{9}{20}$
<b>From Fraction to Percent</b>	$\frac{7}{8} = 0.875 = 87.5\%$

### Methods of Estimating

1. Use compatible numbers.
2. Round to common percents (e.g., 10%, 25%,  $33\frac{1}{3}\%$ ).
3. Break percents into smaller parts (e.g., 1%, 5%, 10%).

## Percent of a Number

Lesson 6-4

**Why?** Information is often given in percents. You need to be able to find the percent of a number to determine what the sales tax is on a purchase or what the discount is during a sale.

Two methods for finding the percent of a number are presented.

### Proportion Method

Find 38% of 60.

Use a proportion.

$$\begin{aligned} \frac{38}{100} &= \frac{n}{60} \\ 100n &= 38 \cdot 60 \\ 100n &= 2,280 \\ n &= 22.8 \\ 38\% \text{ of } 60 &\text{ is } 22.8. \end{aligned}$$

### Equation Method

Find 53% of 12.

Use a decimal.

$$\begin{aligned} n &= 0.53 \cdot 12 \\ n &= 6.36 \\ 53\% \text{ of } 12 &\text{ is } 6.36. \end{aligned}$$

## Percent Problems

Lesson 6-5

**Why?** Many real-world situations, such as figuring profit and loss, discounts, and taxes, involve solving equations with percents.

Either a proportion or a decimal can be used to solve percent problems.

### Find the percent.

62 is what percent of 160?

Use a proportion.

$$\begin{aligned} \frac{n}{100} &= \frac{62}{160} \\ 160n &= 62 \cdot 100 \\ 160n &= 6,200 \\ \frac{160n}{160} &= \frac{6,200}{160} \\ n &= 38.75 \\ 62 &\text{ is } 38.75\% \text{ of } 160. \end{aligned}$$

### Find the number.

28 is 32% of what number?

Use a decimal.

$$\begin{aligned} 28 &= 0.32n \\ \frac{28}{0.32} &= \frac{0.32n}{0.32} \\ 87.5 &= n \\ 28 &\text{ is } 32\% \text{ of } 87.5. \end{aligned}$$