

**10-5**

**Study Guide and Intervention**

**Percents and Fractions**

To write a percent as a fraction, write it as a fraction with a denominator of 100. Then simplify.

**EXAMPLE 1** Write 15% as a fraction in simplest form.

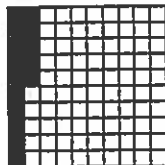
15% means 15 out of 100.

$$15\% = \frac{15}{100}$$

$$= \frac{\overset{3}{\cancel{15}}}{\underset{20}{\cancel{100}}} \text{ or } \frac{3}{20}$$

Write the percent as a fraction with a denominator of 100.

Simplify. Divide the numerator and denominator by the GCF, 5.



**EXAMPLE 2** Write 180% as a fraction in simplest form.

180% means 180 out of 100.

$$180\% = \frac{180}{100}$$

$$= \frac{\overset{4}{\cancel{180}}}{\underset{5}{\cancel{100}}} \text{ or } 1\frac{4}{5}$$

Write the percent as a fraction with a denominator of 100.

Simplify.



You can also write fractions as percents. To write a fraction as a percent, write a proportion and solve.

**EXAMPLE 3** Write  $\frac{2}{5}$  as a percent.

$$\frac{2}{5} = \frac{n}{100}$$

Set up a proportion.

$$2 \times 100 = 5 \times n$$

Write the cross products.

$$200 = 5n$$

Multiply.

$$\frac{200}{5} = \frac{5n}{5}$$

Divide each side by 5.

$$40 = n$$

So,  $\frac{2}{5}$  is equivalent to 40%.

**EXAMPLE 4** Write  $\frac{9}{8}$  as a percent.

$$\frac{9}{8} = \frac{p}{100}$$

Set up a proportion.

$$9 \times 100 = 8 \times p$$

Write the cross products.

$$900 = 8p$$

Multiply.

$$\frac{900}{8} = \frac{8p}{8}$$

Divide each side by 8.

$$112.5 = p$$

So,  $\frac{9}{8}$  is equivalent to 112.5%.

**EXERCISES**

Write each percent as a fraction in simplest form.

1. 20%

2. 35%

3. 70%

4. 60%

5. 150%

6. 225%

Write each fraction as a percent.

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

8.  $\frac{2}{100}$

9.  $\frac{8}{5}$

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

11.  $\frac{10}{8}$

12.  $\frac{13}{100}$

**10-5****Practice: Word Problems****Percents and Fractions**

<p>1. <b>TOYS</b> The Titanic Toy Company has a 4% return rate on its products. Write this percent as a fraction in simplest form.</p>	<p>2. <b>MUSIC</b> There are 4 trombones out of 25 instruments in the Landers town band. What percent of the instruments are trombones?</p>
<p>3. <b>SHOPPING</b> Alicia's favorite clothing store is having a 30% off sale. What fraction represents the 30% off sale?</p>	<p>4. <b>FOOD</b> At Ben's Burger Palace, 45% of the customers order large soft drinks. What fraction of the customers order large soft drinks?</p>
<p>5. <b>BASKETBALL</b> In the 2001–2002 NBA season, Shaquille O'Neal of the Los Angeles Lakers made 60% of his field goals. What fraction of his field goals did Shaquille make?</p>	<p>6. <b>SCHOOL</b> In Janie's class, 7 out of 25 students have blue eyes. What percent of the class has blue eyes?</p>
<p>7. <b>TESTS</b> Michael answered <math>\frac{17}{20}</math> questions correctly on his test. What percent of the questions did Michael answer correctly?</p>	<p>8. <b>RESTAURANTS</b> On Saturday afternoon, <math>\frac{41}{50}</math> telephone calls taken at The Overlook restaurant were for dinner reservations. What percent of the telephone calls were for dinner reservations?</p>