

## Lesson 6-5

### Example 1 Find the Percent

#### Four is what percent of 5?

Four is being compared to 5. So, 4 is the part and 5 is the base. Let  $p$  represent the percent.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{4}{5} = \frac{p}{100}$$

Replace  $a$  with 4 and  $b$  with 5.

$$4 \cdot 100 = 5 \cdot p$$

Find the cross products.

$$400 = 5p$$

Simplify.

$$\frac{400}{5} = \frac{5p}{5}$$

Divide each side by 5.

$$80 = p$$

So, 4 is 80% of 5.

### Example 2 Find the Percent

#### What percent of 5 is 11?

Eleven is being compared to 5. So, 11 is the part and 5 is the base. Let  $p$  represent the percent.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{11}{5} = \frac{p}{100}$$

Replace  $a$  with 11 and  $b$  with 5.

$$11 \cdot 100 = 5 \cdot p$$

Find the cross products.

$$1100 = 5p$$

Simplify.

$$\frac{1100}{5} = \frac{5p}{5}$$

Divide each side by 5.

$$220 = p$$

So, 11 is 220% of 5.

### Example 3 Apply the Percent Proportion

#### SCHOOL In a sixth grade class, 18 of the 30 students are female. What percent of the students in the class are female?

Compare the number of females, 18, to the total number of students in the class, 30. So 18 is the part and 30 is the base.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{18}{30} = \frac{p}{100}$$

Replace  $a$  with 18 and  $b$  with 30.

$$18 \cdot 100 = 30 \cdot p$$

Find the cross products.

$$1800 = 30p$$

Simplify.

$$\frac{1800}{30} = \frac{30p}{30}$$

Divide each side by 30.

$$60 = p$$

Simplify.

So, 60% of the students in the class are female.

**Example 4 Find the Part****What number is 37.5% of 484?**The percent is 37.5, and the base is 484. Let  $a$  represent the part.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{a}{484} = \frac{37.5}{100}$$

Replace  $b$  with 484 and  $p$  with 37.5.

$$a \cdot 100 = 484 \cdot 37.5$$

Find the cross products.

$$100a = 18150$$

Simplify.

$$a = 181.5$$

Mentally divide each side by 100.

So, 37.5% of 484 is 181.5.

**Example 5 Apply the Percent Proportion****NUTRITION** A survey of the diet of 1650 children showed that 48% do not get an adequate amount of calcium in their daily diet. How many of these 1650 children do not get enough calcium in their diet?The total number of children is 1650. So, 1650 is the base. The percent is 48%. Let  $a$  represent the part.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{a}{1650} = \frac{48}{100}$$

Replace  $b$  with 1650 and  $p$  with 48.

$$a \cdot 100 = 1650 \cdot 48$$

Find the cross products.

$$100a = 79200$$

Simplify.

$$a = 792$$

Mentally divide each side by 100.

So, 792 children do not get enough calcium in their diet.

**Example 6 Find the Base****Sixteen is 80% of what number?**The percent is 80% and the part is 16. Let  $b$  represent the base.

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{16}{b} = \frac{80}{100}$$

Replace  $a$  with 16 and  $p$  with 80.

$$16 \cdot 100 = b \cdot 80$$

Find the cross products.

$$1600 = 80b$$

Simplify.

$$\frac{1600}{80} = \frac{80b}{80}$$

Divide each side by 80.

$$20 = b$$

Simplify.

So, 16 is 80% of 20.