

# 3.7 Solve Percent Problems

TEKS **a.1, A.3.A, A.4.A; 8.3.B**

**Before**

You solved proportions.

**Now**

You will solve percent problems.

**Why?**

So you can solve a problem about racing, as in Ex. 34.



## Key Vocabulary

- **percent**, p. 916
- **proportion**, p. 163

Recall that *percent* means “divided by 100.” For example  $27\% = \frac{27}{100}$ .

By writing a percent as a fraction, you can use a proportion to solve a percent problem.

## KEY CONCEPT

*For Your Notebook*

### Solving Percent Problems Using Proportions

You can represent “ $a$  is  $p$  percent of  $b$ ” using the proportion

$$\frac{a}{b} = \frac{p}{100}$$

where  $a$  is a part of the base  $b$  and  $\frac{p}{100}$ , or  $p\%$ , is the percent.

## EXAMPLE 1 Find a percent using a proportion

What percent of 25 is 17?

### Solution

Write a proportion where 25 is the base and 17 is a part of the base.

$$\frac{a}{b} = \frac{p}{100} \quad \text{Write proportion.}$$

$$\frac{17}{25} = \frac{p}{100} \quad \text{Substitute 17 for } a \text{ and 25 for } b.$$

$$1700 = 25p \quad \text{Cross products property}$$

$$68 = p \quad \text{Divide each side by 25.}$$

▶ 17 is 68% of 25.

 at classzone.com

### AVOID ERRORS

You can also solve for  $p$  by multiplying each side of the equation by 100.

## GUIDED PRACTICE for Example 1

Use a proportion to answer the question.

1. What percent of 20 is 15?
2. What number is 30% of 90?