THE PERCENT EQUATION In Example 1, the proportion $\frac{a}{b} = \frac{p}{100}$ is used to find a percent. When you write $\frac{p}{100}$ as $p\%$ and solve for a, you get the equation $a = p\% \cdot b$.

KEY CONCEPT *For Your Notebook*

The Percent Equation

You can represent "a is p percent of b" using the equation

$$a = p\% \cdot b$$

where a is a part of the base b and $p\%$ is the percent.

EXAMPLE 2 Find a percent using the percent equation

What percent of 136 is 51?

DETERMINE THE BASE
When a problem talks about the percent *of* a number, the number is the base b, which is multiplied by the percent.

$a = p\% \cdot b$		Write percent equation.
$51 = p\% \cdot 136$		Substitute 51 for a and 136 for b.
$0.375 = p\%$		Divide each side by 136.
$37.5\% = p\%$		Write decimal as percent.

▶ 51 is 37.5% of 136.

CHECK Substitute 0.375 for $p\%$ in the original equation.

$51 = p\% \cdot 136$	Write original equation.
$51 \stackrel{?}{=} 0.375 \cdot 136$	Substitute 0.375 for $p\%$.
$51 = 51$ ✓	Multiply. Solution checks.

EXAMPLE 3 Find a part of a base using the percent equation

What number is 15% of 88?

$a = p\% \cdot b$	Write percent equation.
$= 15\% \cdot 88$	Substitute 15 for p and 88 for b.
$= 0.15 \cdot 88$	Write percent as decimal.
$= 13.2$	Multiply.

▶ 13.2 is 15% of 88.

✓ GUIDED PRACTICE for Examples 2 and 3

Use the percent equation to answer the question.

3. What percent of 56 is 49?

4. What percent of 55 is 11?

5. What number is 45% of 92?

6. What number is 140% of 50?