Lesson 7-2

Example 1 Find the Percent
What percent of $85 is $51?

The number 85 comes after the word *of*, so the whole is 85. You are asked to find the percent, so the part is the remaining number, 51.

Words   What percent of $85 is $51?

Variable   Let n% represent the percent.

Equation $\dfrac{\text{part}}{\text{whole}} \rightarrow \dfrac{51}{85} = \dfrac{n}{100} \leftarrow$ percent

$\dfrac{51}{85} = \dfrac{n}{100}$ Write the proportion.

$51 \cdot 100 = 85 \cdot n$ Find the cross products.

$5,100 = 85n$ Simplify.

$\dfrac{5,100}{85} = \dfrac{85n}{85}$ Divide each side by 85.

$60 = n$

So, 60% of $85 is $51.

Example 2 Find the Part
What number is 90% of 80?

The percent is 90%. Since the number 80 comes after the word *of*, the whole is 80. You are asked to find the part.

Words   What number is 90% of 80?

Variable   Let *p* represent the part.

Equation $\dfrac{\text{part}}{\text{whole}} \rightarrow \dfrac{p}{80} = \dfrac{90}{100} \leftarrow \text{percent}$

$$\dfrac{p}{80} = \dfrac{90}{100}$$ Write the proportion.

$p \cdot 100 = 80 \cdot 90$ Find the cross products.
$100p = 7{,}200$ Simplify.

$$\dfrac{100p}{100} = \dfrac{7{,}200}{100}$$ Divide each side by 100.

$p = 72$

So, 72 is 90% of 80.

Example 3 Find the Whole
45 is 75% of what number?

The percent is 75%. The words *what number* come after the word *of*. So, you are asked to find the whole. Thus, 45 is the part.

Words   45 is 75% of what number?

Variable   Let *w* represent the whole.

Equation $\dfrac{\text{part}}{\text{whole}} \rightarrow \dfrac{45}{w} = \dfrac{75}{100} \leftarrow \text{percent}$

$\dfrac{45}{w} = \dfrac{75}{100}$ Write the proportion.

$45 \cdot 100 = w \cdot 75$ Find the cross products.

$4500 = 75w$ Simplify.

$\dfrac{4500}{75} = \dfrac{75w}{75}$ Divide each side by 75.

$w = 60$

So, 45 is 75% of 60.

Example 4 Use Percent to Solve a Problem
SHOPPING Elizabeth spends $12.40 on a new CD. This amount is 62% of her monthly allowance. Find the amount of Elizabeth's monthly allowance.

You know that $12.40 is 62% of Elizabeth's monthly allowance. So, the problem asks $12.40 is 62% of what number. Thus, you need to find the whole.

$$\frac{12.40}{w} = \frac{62}{100}$$ Write the proportion.

$12.40 \cdot 100 = w \cdot 62$ Find the cross products.

$1240 = 62w$ Simplify.

$$\frac{1240}{62} = \frac{62w}{62}$$ Divide each side by 62.

$w = 20$

So, $12.40 is 62% of $20.