

2-9 Reteaching

Percents

Percents compare whole quantities, represented by 100%, and parts of the whole.

Problem

What percent of 90 is 27?

There are two ways presented for finding percents.

- 1) You can use the percent proportion $\frac{a}{b} = \frac{P}{100}$. The percent is represented by $\frac{P}{100}$. The base, b , is the whole quantity and must be the denominator of the other fraction in the proportion. The part of the quantity is represented by a .

$$\frac{27}{90} = \frac{p}{100}$$

$$27(100) = (90)(p)$$

$$2700 = 90p$$

$$30 = p$$

Substitute given values into the percent proportion. Since you are looking for percent, p is the unknown.

Cross Products Property

Multiply.

Divide each side by 90 and simplify.

27 is 30% of 90.

- 2) The other way to find percents is to use the percent equation. The percent equation is $a = p\% \times b$, where p is the percent, a is the part, and b is the base.

$$27 = p\% \times 90$$

$$0.3 = p\%$$

$$30\% = p\%$$

Substitute 27 for a and 90 for b .

Divide each side by 90.

Write the decimal as a percent.

27 is 30% of 90.

Exercises

Find each percent.

1. What percent of 125 is 50?

2. What percent of 14 is 35?

3. What percent of 24 is 18?

4. What percent of 50 is 75?

Problem

75% of 96 is what number?

In this problem you are given the percent p and the whole quantity (base) b .

$$a = p\% \times b$$

$$a = 75\% \times 96 = 72$$

Write the percent equation.

Substitute 75 for p and 96 for b .

Multiply.

Problem

28% of what number is 42?

You are given the percent p and the partial quantity a . You are looking for the base b .

$a = p\% \times b$	Write the percent equation.
$42 = 28\% \times b$	Substitute 28 for p and 42 for a .
$42 = 0.28 \times b$	Write 28% as a decimal, 0.28.
$150 = b$	Divide each side by 0.28.

Exercises

Find each part.

5. What is 32% of 250?

6. What is 78% of 130?

Find each base.

7. 45% of what number is 90?

8. 70% of what number is 35?

Problems involving simple interest can be solved using the formula $I = Prt$, where I is the interest, P is the principal, r is the annual interest rate written as a decimal, and t is the time in years.

Problem

You deposited \$2200 in a savings account that earns a simple interest rate of 2.8% per year. You want to keep the money in the account for 3 years. How much interest will you earn?

$I = Prt$	Simple Interest Formula
$I = (2200)(2.8\%)(3)$	Substitute 2200 for P , 2.8% for r , and 3 for t .
$I = 184.8$	Multiply.

You will earn \$184.80 in interest.

Exercises

9. If you deposit \$11,000 in a savings account that earns simple interest at a rate of 3.5% per year, how much interest will you have earned after 5 years?

10. If you deposit \$500 in a savings account that earns simple interest at a rate of 4.25% per year, how much interest will you have earned after 10 years?

Lesson 2-9

Find each *percent, part, or base.*

1. What percent of 35 is 14?
2. What percent of 48 is 36?
3. What is 30% of 124?

4. What is 12.5% of 136?
5. 25% of what number is 63?
6. 15% of what number is 8.4?

7. You deposit \$750 in a savings account that earns simple interest at a rate of 2.5% per year. How much interest will you have earned after 5 years?

Answers: 40%, 75%, 37.2, 17, 252, 56, \$93.75