

The Percent Proportion (pages 349–351)

The **percent proportion** is $\frac{P}{B} = \frac{r}{100}$, where P represents the **percentage**, B represents the **base**, and r represents the number per 100. Using the proportion $\frac{1}{2} = \frac{50}{100}$, you can see how to use the percent proportion to solve the three basic types of percent equations.

Find the percentage.	What number is 50% of 2? (Percentage)	$\frac{?}{2} = \frac{50}{100}$
Find the rate.	1 is what percent of 2? (Rate)	$\frac{1}{2} = \frac{?}{100}$
Find the base.	1 is 50% of what number? (Base)	$\frac{1}{?} = \frac{50}{100}$

EXAMPLES

A 32 is 40% of what number?

$$\frac{32}{B} = \frac{40}{100}$$

Write the percent proportion replacing P with 32 and r with 40.

$$32 \times 100 = B \times 40 \quad \text{Find the cross products.}$$

$$\frac{3,200}{40} = \frac{40B}{40}$$

Divide each side by 40.

$$80 = B$$

So, 32 is 40% of 80.

B 30 is what percent of 150?

$$\frac{30}{150} = \frac{r}{100}$$

Write the percent proportion replacing P with 30 and B with 150.

$$30 \times 100 = 150 \times r \quad \text{Find the cross products.}$$

$$\frac{3,000}{150} = \frac{150r}{150}$$

Divide each side by 150.

$$20 = r$$

So, 30 is 20% of 150.

Try These Together

Find each number. Round to the nearest tenth if necessary.

1. 6 is what percent of 12?

2. What number is 68% of 90?

PRACTICE

Find each number. Round to the nearest tenth if necessary.

- What percent of 24 is 6?
- 8% of what number is 10?
- What number is 60% of 20?
- What percent of 400 is 60?
- Find 110% of 16.
- What percent of 40 is 8?
- 15 is 30% of what number?
- What percent of 96 is 12?
- What number is 12% of 50?
- 90 is 45% of what number?



13. Standardized Test Practice During a flu epidemic, 3 of the 20 students in Marina's class were absent with the flu. What percent of the students in Marina's class were absent?

A 10%

B 5%

C 20%

D 15%

Answers: 1. 50% 2. 61.2 3. 25% 4. 20% 5. 125 6. 50 7. 12 8. 12.5% 9. 15% 10. 6 11. 17.6 12. 200 13. D