

Lesson 3 *The Percent Proportion*

A **percent proportion** compares part of a quantity to a whole quantity for one ratio and lists the percent as a number over 100 for the other ratio.

$$\left. \begin{array}{l} \text{part} \rightarrow \frac{p}{w} \\ \text{whole} \rightarrow \frac{n}{100} \end{array} \right\} \text{percent}$$

Example 1

What percent of 24 is 18?

$$\frac{p}{w} = \frac{n}{100}$$

Percent proportion

Let $n\%$ represent the percent.

$$\frac{18}{24} = \frac{n}{100}$$

Write the proportion.

$$18 \times 100 = 24 \times n$$

Find the cross products.

$$1,800 = 24n$$

Simplify.

$$\frac{1,800}{24} = \frac{24n}{24}$$

Divide each side by 24.

$$75 = n$$

So, 18 is 75% of 24.

Example 2

What number is 60% of 150?

$$\frac{p}{w} = \frac{n}{100}$$

Percent proportion

Let $n\%$ represent the percent.

$$\frac{n}{150} = \frac{60}{100}$$

Write the proportion.

$$n \times 100 = 150 \times 60$$

Find the cross products.

$$100n = 9,000$$

Simplify.

$$\frac{100n}{100} = \frac{9,000}{100}$$

Divide each side by 100.

$$n = 90$$

So, 90 is 60% of 150.

Exercises

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

1. What number is 25% of 20? **5**
2. What percent of 50 is 30? **60%**
3. 30 is 75% of what number? **40**
4. 40% of what number is 36? **90**
5. What number is 20% of 625? **125**
6. 12 is what percent of 30? **40%**

Lesson 3 Skills Practice

The Percent Proportion

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

1. 50 is 20% of what number? **250**

2. What percent of 20 is 4? **20%**

5. What number is 45% of 180? **81**

6. 40% of what number is 82? **205**

9. What number is 32% of 1,000? **320**

10. What percent of 125 is 5? **4%**

13. What percent of 185 is 35? **18.9%**

14. 25 is what percent of 365? **6.8%**

17. What percent of 128 is 24? **18.8%**

18. 5.25% of 170 is what number? **8.9**

19. What is 82% of 230? **188.6**

20. What percent of 49 is 7? **14.3%**