

Finding the Percent One Number Is of Another

Objective: To find the percent one number is of another.

You can use an equation to find out what percent one number is of another number.

Example

- What percent of 75 is 21?
- What percent of 16 is 22?
- 12.5 is what percent of 500?

Solution

Let n = the percent.

- What percent of 75 is 21?

$$\begin{array}{r} \underline{\hspace{2cm}} \downarrow \downarrow \downarrow \downarrow \\ n \quad \cdot 75 = 21 \\ 75n = 21 \\ \frac{75n}{75} = \frac{21}{75} \end{array}$$

$$n = \frac{21}{75} = \frac{7}{25} = \frac{28}{100} = 28\%$$

So 28% of 75 is 21.

- What percent of 16 is 22?

$$\begin{array}{r} \underline{\hspace{2cm}} \downarrow \downarrow \downarrow \downarrow \\ n \quad \cdot 16 = 22 \\ 16n = 22 \\ \frac{16n}{16} = \frac{22}{16} \end{array}$$

$$n = \frac{22}{16} = \frac{11}{8} = 1.37\frac{1}{2} = 137\frac{1}{2}\%$$

So $137\frac{1}{2}\%$ of 16 is 22.

- 12.5 is what percent of 500?

$$\begin{array}{r} \downarrow \downarrow \downarrow \downarrow \\ 12.5 = n \cdot 500 \\ 12.5 = 500n \\ \frac{12.5}{500} = \frac{500n}{500} \end{array}$$

$$n = \frac{12.5}{500} = 0.025 = 2.5\%$$

So 12.5 is 2.5% of 500.

Check Your Understanding

- In Example 1(a), why was $\frac{7}{25}$ written with a denominator of 100?
- Explain how you know that $\frac{12.5}{500} = 0.025$ in Example 1(c).

COMMUNICATION «Writing

Write an equation that represents each question. Let n represent the unknown percent.

- «1. What percent of 100 is 37? «2. What percent of 25 is 19.5?
«3. 28 is what percent of 5.6? «4. 6 is what percent of 40?

Write a question involving percents that could be represented by each equation.

- «5. $34n = 17$ «6. $\frac{1}{2}n = \frac{3}{4}$
«7. $23.7 = 60n$ «8. $78 = 12.5n$

Write each fraction as a percent.

9. $\frac{16.2}{60}$ 10. $\frac{72}{64.8}$ 11. $\frac{9.3}{12.4}$

Find each answer.

12. What percent of 50 is 37? 13. 120 is what percent of 150?
14. What percent of 75 is 100? 15. 2.4 is what percent of 120?