

The Percent Equation

Lesson 6-4

Solving Percent Problems

- Yesterday, we learned how to solve percent problems using the Percent Proportion. Today, we are going to learn how to solve percent problems using an equation.

Writing Percent Equations

- What number is 75% of 4?

$$x = 0.75 \cdot 4$$

- 3 is what percent of 4?

$$3 = x \cdot 4$$

- 75% of what number is 3?

$$0.75 \cdot x = 3$$

Writing Percent Equations

- Replace what you are being asked to find with a variable.
- Replace is with an equal sign
- Replace of with a multiplication symbol
- Rewrite Percent as a decimal

Percent Equation

Example 1: **What number is 24% of 50?**

$$x = 0.24 \cdot 50$$

$$x = 12$$

Percent Equation

Example 2 : **9.5 is what percent of 25?**

$$9.5 = x \cdot 25$$

$$9.5 = 25x$$

$$\frac{9.5}{25} = \frac{25x}{25}$$

$$0.38 = x$$

Write as a percent

$$38\% = x$$

Percent Equation

Example 3 : 39 is 52% of what number?

$$39 = 0.52 \cdot x$$

$$39 = 0.52x$$

$$\frac{39}{0.52} = \frac{0.52x}{0.52}$$

$$75 = x$$

On Your Own

Write and solve an equation to answer the question.

1. What number is 10% of 20?

$$x = 0.1 \cdot 20$$

$$x = 2$$

2. 3 is what percent of 600? **0.5%**

$$3 = x \cdot 600$$

$$3 = 600x$$

$$0.005 = x$$

3. What number is 150% of 40?

$$x = 1.5 \cdot 40$$

$$x = 60$$

4. 18 is what percent of 20? **90%**

$$18 = x \cdot 20$$

$$18 = 20x$$

$$0.9 = x$$

5. 8 is 80% of what number?

$$8 = 0.8 \cdot x$$

$$8 = 0.8x$$

$$10 = x$$

6. 90 is 18% of what number?

$$90 = 0.18 \cdot x$$

$$90 = 0.18x$$

$$500 = x$$