PERCENT WORD PROBLEMS

The key to solving percent word problems is to translate the word problem into mathematical symbols first. Remember these steps, and solving them becomes much easier:

STEP 1: Find the word "is." Put an equal sign above it. This becomes the center of your equation.

STEP 2: Everything that comes before the word "is" can be changed into math symbols and written to the left of the equal sign. Everything that comes after the word "is" should be written to the right of the = sign.
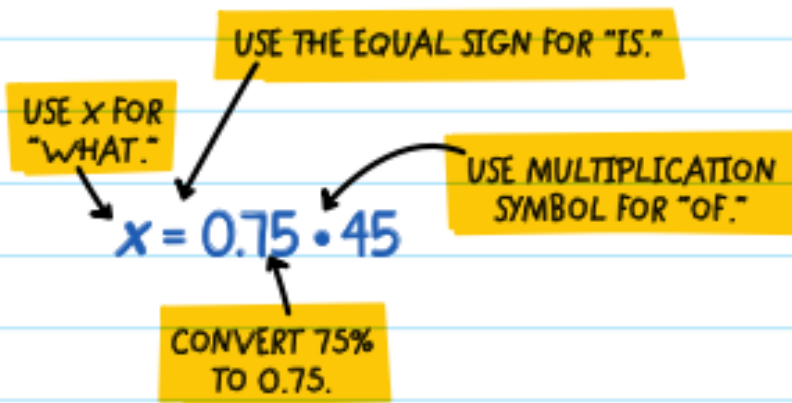
STEP 3: Look for key words:

➡️ "What" or "What number" means an unknown number. Represent the unknown number with a variable like x.

➡️ "Of" means "multiply."

➡️ Percents can be represented as decimals, so if you see % move the decimal two spaces to the left and get rid of the percent sign.

STEP 4: Now you have your number sentence, so do the math!

EXAMPLE: What is 75% of 45?

USE THE EQUAL SIGN FOR "IS."

USE X FOR "WHAT."

USE MULTIPLICATION SYMBOL FOR "OF."

$$x = 0.75 \cdot 45$$

CONVERT 75% TO 0.75.

$$x = 33.75$$

So, 33.75 is 75% of 45.

EXAMPLE: 13 is what percent of 25?

13 = x • 25   (Divide both sides by 25 to get x alone.)

0.52 = x   (To convert 0.52 to a percent, move the decimal two spaces to the right and include the % sign.)

52% = x

So, 13 is 52% of 25.

Don't forget to double-check your math, read through the word problem again, and think about whether your answer makes sense.

EXAMPLE: 4 is 40% of what number?

4 = 0.40 • x   (Divide both sides by 0.4 to get x alone.)

10 = x

So, 4 is 40% of 10.

EXAMPLE: What percentage of 5 is 1.25?

$x \cdot 5 = 1.25$
$x = 0.25$

So, 25% of 5 is 1.25.

CHECK YOUR KNOWLEDGE

1. What is 45% of 60?

2. What is 15% of 250?

3. What is 3% of 97?

4. 11 is what percent of 20?

5. 2 is what percent of 20?

6. 17 is what percent of 25?

7. 35 is 10% of what number?

8. 40 is 80% of what number?

9. 102,000 is 8% of what number?

10. George wants to buy a new bike, which costs $280. So far, he has earned $56. What percent of the total price has he already earned?

CHECK YOUR ANSWERS

1. 27

2. 37.5

3. 2.91

4. 55%

5. 10%

6. 68%

7. 350

8. 50

9. 1,275,000

10. George has already earned 20% of the total price.