

Finding "Part of the Whole"  
when given the percent!

percent proportion:

$$\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100}$$

steps to solve:

1- identify each piece and fill in the proportion.

2- find cross products

3- solve for x by dividing

Examples:

8% of 50

x more than the whole  
175% of 24

(IS OF)  $\frac{x}{50} = \frac{8}{100}$

①  $100x = 50 \cdot 8$   
②  $100x = 400$

③  $\frac{100}{100} = \frac{400}{100}$

$$x = 4$$

①  $\frac{x}{24} = \frac{175}{100}$

②  $100x = 24 \cdot 175$   
 $100x = 4200$

③  $\frac{100}{100} = \frac{4200}{100}$

$$x = 42$$

18.5% of 500 \* 42

$$\frac{18.5}{100} \times 500 = 92.5$$

①  $\frac{X}{500} = \frac{18.5}{100}$

②  $100X = 18.5 \cdot 500$

③  $\frac{100X}{100} = \frac{9250}{100}$

$X = 92.5$

Benchmark %'s:

10% of ...	100 = 10	5%	
	50 = 5	2.5	
	10 = 1	0.5	
	500 = 50	25	
	42 = 4.2	2.1	
50% of ...	100 = 50	25%	75%
	400 = 200	25	15
	80 = 40	100	300
		20	100

100% of ANY number: Itself!

Any % greater than 100% is more than the whole!

\*see example #2!

## Finding a Percent of a Number

To calculate the percent of a number you can use a proportion or an equation.

The proportion looks like this;  $\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100}$

The equation is  $\text{part} = \% \times \text{whole}$   
 \*\*You must convert the % to a decimal

1) What is 50% of 26?

$\downarrow \frac{1}{2}$

$$\textcircled{1} \quad \frac{x}{26} = \frac{50\%}{100}$$

$$\textcircled{2} \quad 100x = 26 \cdot 50$$

$$\textcircled{3} \quad \frac{100x}{100} = \frac{1300}{100}$$

$$\boxed{x = 13}$$

2) What is 20% of 55?

3) What is 25% of 16?

$\downarrow \frac{1}{4}$

$$\textcircled{1} \quad \frac{x}{16} = \frac{25\%}{100}$$

$$\textcircled{2} \quad 100x = 16 \cdot 25$$

$$\textcircled{3} \quad \frac{100x}{100} = \frac{400}{100}$$

$$\boxed{x = 4}$$

4) What is 75% of 180?

5) What is 10% of 14?

6) What is 20% of 33?

7) What is 30% of \$1.50?

8) What is 15% of 60?

9) What is 6% of 30?

10) Of the 850 students at Brown Middle School, 38% are in the school band. How many students are in the school band?

- A 32      B 527      C 323      D 812

11) Mario answered 75% of the 40 problems on his history homework correctly. How many problems on his homework did he answer correctly?

- A 19      B 30      C 28      D 10

$$\textcircled{1} \frac{x}{40} = \frac{75\%}{100}$$

$$\textcircled{2} 100x = 75 \cdot 40$$

$$\textcircled{3} \frac{100x}{100} = \frac{3000}{100}$$

$$x = 30$$

12) Jake spent a total of \$20 at the movies. If he spent 60% on movie tickets that were \$6 each, how many tickets did he buy?

- A \$3      B \$12      C 2      D 1

13) A company published 50 books last year, 16% of the books made the best seller list. How many books did NOT become best-sellers?

- A 8      B 42      C 16      D 32

$$\textcircled{1} \frac{x}{50} = \frac{16\%}{100}$$

$$\textcircled{2} 100x = 16 \cdot 50$$

$$\textcircled{3} \frac{100x}{100} = \frac{800}{100}$$

$$x = 8$$

14) The cost of Matt and Natalie's dinner was \$27.35. They want to leave a 20% tip. Which of the following is closest to the amount of the tip they want to leave?

- A \$4.00      B \$4.50      C \$5.00      D \$5.50

15) Mrs. Loya sponsors the Spanish club at Central Middle School. The club has 40 members, 37.5% of its members are 7<sup>th</sup> graders. How many members of the Spanish club are seventh graders?

- A 5      B 15      C 20      D 45

$$\frac{3}{4} > \frac{1}{2}$$

B 30 ✓

B 42 ✓

$$50 - 8 = 42$$