

Get out homework from yesterday and start checking your work.

Classwork - Using the percent proportion

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

1. 55% of 140

$$0.55(140)$$

$$= 77$$

2. 40% of 123

$$0.4(123)$$

$$= 49.2$$

3. 37% of \$150

$$0.37(\$150)$$

$$= \$55.50$$

4. 25% of 96

$$24$$

5. 11% of \$333

$$\$36.63$$

6. 99% of 14

$$13.86$$

7. 4.1% of 30

$$1.23$$

8. 8.9% of 75

$$6.68$$

$$\text{or}$$
$$6.675$$

9. 24.2% of \$120

$$\$29.04$$

10. SALES Mr. Redding sells vehicles to 20% of the people that come to the sales lot. If 65 people came to the lot last month, how many vehicles did he sell?

$$0.2(65) = 13 \text{ vehicles}$$

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

11. 1,000% of 87

$$10(87) \\ = 870$$

12. 100% of 56

$$56$$

13. 0.25% of 150

$$0.0025(150) \\ = 0.375 \\ = 0.38$$

14. 0.7% of 50

$$0.007(50) \\ = 0.35$$

15. ANALYZE TABLES Use the table that shows the percents of blood types of 145 donors during a recent blood drive. SHOW WORK

- a. Find how many donors had type B blood. Round to the nearest whole number if necessary.

$$145(0.11) = 15.95 \quad 16 \text{ donors}$$

Blood Type	Percent
O	45%
A	40%
B	11%
AB	4%

- b. How many donors did not have type O blood? Round to the nearest whole number if necessary.

$$40 + 11 + 4 = 55\% \quad 145(0.55) = 79.75 \\ 80 \text{ donors}$$

- c. Which blood type had less than 10 donors?

$$(AB) \quad 145(0.04) = 5.8 \rightarrow 6 \text{ donors}$$

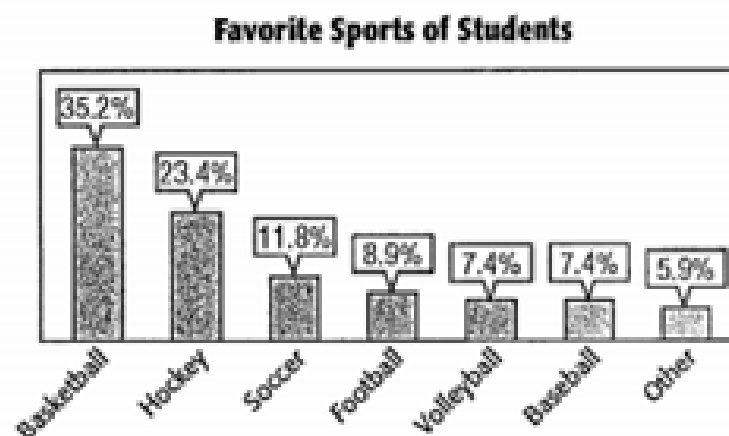
16. ANALYZE BAR GRAPHS Use the bar graph that should the results of a poll of 500 seventh grade students. SHOW WORK

- a. Find how many students surveyed chose hockey as their favorite sport.

$$0.234(500) = 117 \text{ students}$$

- b. Find how many students surveyed chose basketball as their favorite sport.

$$0.352(500) = 176 \text{ students}$$



- c. Find how many students surveyed chose either soccer or volleyball as their favorite sport.

$$11.8\% + 7.4\% = 19.2\%$$

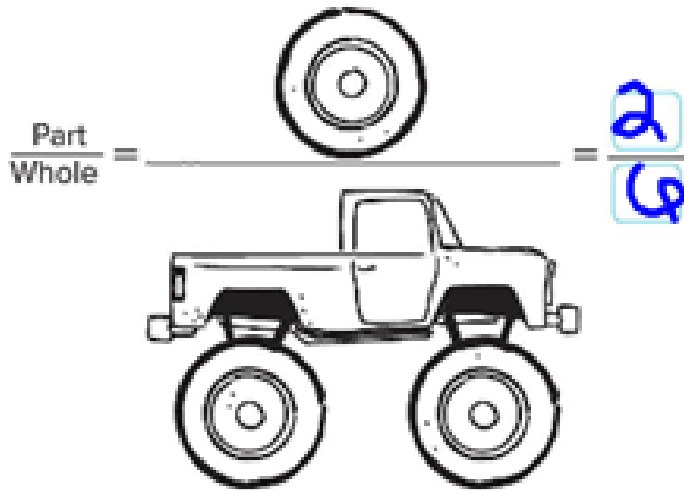
$$0.192(500) = 96 \text{ students}$$



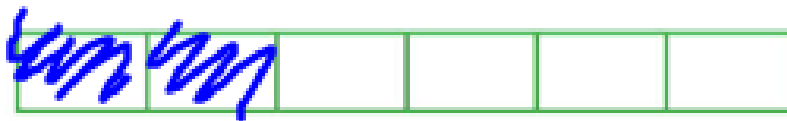
Real-World Link

Monster Trucks The tires on a monster truck weigh approximately 2 tons. The entire truck weighs about 6 tons.

1. Write the ratio of tire weight to total weight as a fraction.



2. Represent the fraction above by shading in the model.



3. Write the fraction as a decimal to the nearest hundredth.

$$\frac{2}{6} = 0.\bar{3} \text{ or } 0.33$$

4. About what percent of the monster truck's weight is the tires?

$$0.33 = 33\%$$

p. 121

$\frac{2}{6}$

Use the Percent Proportion

Type	Example	Proportion
Find the Percent	What percent of 5 is 4?	$\frac{4}{5} = \frac{n}{100}$
Find the Part	What number is 80% of 5?	$\frac{p}{5} = \frac{80}{100}$
Find the Whole	4 is 80% of what number?	$\frac{4}{w} = \frac{80}{100}$

In a **percent proportion**, one ratio or fraction compares part of a quantity to the whole quantity. The other ratio is the equivalent percent written as a fraction with a denominator of 100.

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

4 out of **5** is **80%**

$$\left. \begin{array}{l} \frac{\text{part}}{\text{whole}} \rightarrow \frac{4}{5} = \frac{80}{100} \\ \text{percent} \end{array} \right\}$$

Example



1. What percent of \$15 is \$9?

Words	What percent of \$15 is \$9?
Variable	Let n represent the percent.
Proportion	$\frac{\text{part}}{\text{whole}} \rightarrow \frac{9}{15} = \frac{n}{100} \text{ percent}$

$$\frac{9}{15} = \frac{n}{100}$$

Write the proportion.

$$9 \cdot 100 = 15 \cdot n$$

Find the cross products.

$$900 = 15n$$

Simplify.

$$\frac{900}{15} = \frac{15n}{15}$$

Divide each side by 15.

$$60 = n$$

$$n = 60\%$$

So, \$9 is 60% of \$15.

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

is \rightarrow part

of \rightarrow whole

Got it? Do these problems to find out.

a. What percent of 25 is 20?

b. \$12.75 is what percent of \$50?

$$\frac{20}{25} = \frac{x}{100}$$

$$2000 = 25x$$
$$\div 25$$

$$80\% = x$$

$$\frac{12.75}{50} = \frac{x}{100}$$

$$1275 = 50x$$
$$\div 50$$

$$25.5\% = x$$

Example

2. What number is 40% of 120?

Words

What number is 40% of 120?



Variable

Let p represent the part.



Proportion

$$\left. \begin{array}{l} \text{part} \rightarrow \frac{p}{120} \\ \text{whole} \rightarrow 100 \end{array} \right\} = \frac{40}{100} \text{ percent}$$

$$\frac{p}{120} = \frac{40}{100}$$

Write the proportion.

$$p \cdot 100 = 120 \cdot 40$$

Find the cross products.

$$100p = 4,800$$

Simplify.

$$\frac{100p}{100} = \frac{4,800}{100}$$

Divide each side by 100.

$$p = 48$$

So, 48 is 40% of 120.

Got it? Do these problems to find out.

c. What number is 5% of 60?

d. 12% of 85 is what number?

$$\frac{x}{60} = \frac{5}{100}$$

$$300 = 100x$$
$$\div 100$$

$$x = 3$$

$$\frac{x}{85} = \frac{12}{100}$$

$$1020 = 100x$$
$$\div 100$$

$$x = 10.2$$

Example

3. 18 is 25% of what number?

Words

18 is 25% of what number?

Variable

Let w represent the whole.

Proportion

$$\begin{array}{l} \text{part} \rightarrow \frac{18}{w} = \frac{25}{100} \\ \text{whole} \rightarrow \end{array} \left. \vphantom{\begin{array}{l} \text{part} \\ \text{whole} \end{array}} \right\} \text{percent}$$

$$\frac{18}{w} = \frac{25}{100}$$

Write the proportion.

$$18 \cdot 100 = w \cdot 25$$

Find the cross products.

$$1,800 = 25w$$

Simplify.

$$\frac{1,800}{25} = \frac{25w}{25}$$

Divide each side by 25.

$$72 = w$$

So, 18 is 25% of 72.

Got it? Do these problems to find out.

e. 40% of what number is 26?

f. 84 is 75% of what number?

$$e) \frac{26}{w} = \frac{40}{100}$$

$$2600 = 40 \cdot w$$
$$\div 40$$

$$w = 65$$

$$f) \frac{84}{x} = \frac{75}{100}$$

$$75x = 8400$$
$$\div 75$$

$$x = 112$$



Example



4. The average adult male Western Lowland gorilla eats about 33.5 pounds of fruit each day. How much food does the average adult male gorilla eat each day?

You know that 33.5 pounds is the part. You need to find the whole.

$$\frac{33.5}{w} = \frac{67}{100} \quad \text{Write the proportion.}$$

$$33.5 \cdot 100 = w \cdot 67 \quad \text{Find the cross products.}$$

$$3,350 = 67w \quad \text{Simplify.}$$

$$\frac{3,350}{67} = \frac{67w}{67} \quad \text{Divide each side by 67.}$$

$$50 = w$$

The average adult male gorilla eats 50 pounds of food each day.

Western Lowland Gorilla's Diet	
Food	Percent
Fruit	67%
Seeds, leaves, stems, and pith	17%
Insects/ insect larvae	16%

Work on #4 of Guided Practice for Got It?

4. Brand A cereal contains 10 cups of cereal. How many more cups of cereal are in Brand B cereal?

(Example 4)



Work on #7 and 8 of Independent Practice

7. A pair of sneakers is on sale as shown. This is 75% of the original price. What was the original price of the shoes? (Example 4) _____



8. Of the 60 books on a bookshelf, 24 are nonfiction. What percent of the books are nonfiction? (Example 4) _____

$$7) \frac{51}{x} = \frac{75}{100}$$

$$8) \frac{24}{60} = \frac{x}{100}$$