



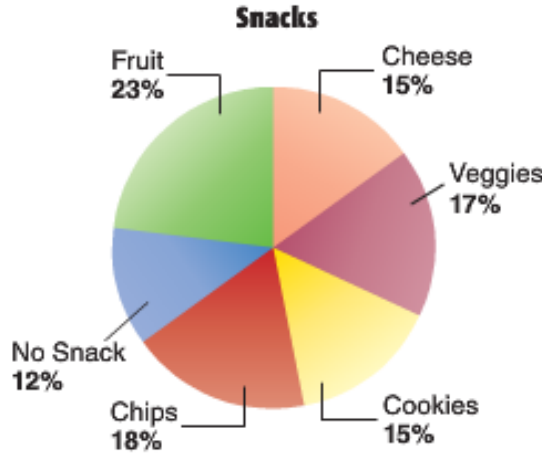
# Find the Percent of a Number

You can use fractions and decimals to find the percent of a number. To find the percent of a number, write the percent as a fraction with a denominator of 100. Then multiply the fraction by the number.

## Example



1. Refer to the circle graph. Suppose there are 300 students at York Middle School. Find the number of students that have cheese as a snack.



*D = P*

**Method 1** Write the percent as a fraction.

**Method 2** Write the percent as a decimal.

15% of 300  
x

$$\frac{15}{100} \times \frac{300}{1} = \frac{4500}{100} = 45$$

15% of 300

$$0.15 \times 300$$

$$\begin{array}{r} 300 \\ \times \quad .15 \\ \hline 1500 \\ + 3000 \\ \hline 45.00 \end{array}$$

**Got It?** Do this problem to find out.

- a. Find the number of students at York Middle School that have chips as a snack.

18% of 300

$$0.18 \times 300$$

$$\begin{array}{r} 300 \\ \times .18 \\ \hline 2400 \\ 3000 \\ \hline 5400 \end{array}$$

54 students

# Percents Greater Than 100% and Less Than 1%

$$D \Leftrightarrow P \quad \frac{0.25}{100} = \frac{25}{10,000}$$

## Examples

2. Find 145% of 320.  $< 464$

$$145\% \text{ of } 320$$

$$1.45 \times 320$$

$$\begin{array}{r} 320 \\ \times 1.45 \\ \hline \end{array} = \boxed{464}$$

$$\begin{array}{r} 320 \\ \times 1.45 \\ \hline 1600 \\ 12800 \\ + 32000 \\ \hline 46400 \end{array}$$

3. Find 220% of 65.

$$220\% \text{ of } 65$$

$$2.2 \times 65$$

$$\begin{array}{r} 65 \\ \times 2.2 \\ \hline 130 \\ 1300 \\ \hline 143.0 \end{array} = \boxed{143}$$

$$\begin{array}{r} 65 \\ \times 2.2 \\ \hline 130 \\ 1300 \\ \hline 143.0 \end{array}$$

4. Find 0.25% of 58.

$$0.0025\% \text{ of } 58$$

$$0.0025 \times 58$$

$$\begin{array}{r} 25 \\ \times 58 \\ \hline 200 \\ 1250 \\ \hline 1450 \end{array} = \boxed{0.145}$$

Got It? Do these problems to find out.

Find the percent of each number.

b. 128% of 550

$$\begin{array}{r} 128 \\ \times 550 \\ \hline \end{array}$$

$$\begin{array}{r} 550 \\ \times 1.28 \\ \hline 4400 \\ 11000 \\ 55000 \\ \hline 70400 \end{array}$$

c. 0.3% of 200

$$\begin{array}{r} 0.003 \\ \times 200 \\ \hline \end{array}$$

$$\begin{array}{r} 0000 \\ 00000 \\ 000000 \\ \hline 000.600 \\ 0.6 \end{array}$$

d. 0.85% of 600

$$\begin{array}{r} 600 \\ \times 0.85 \\ \hline 48000 \\ 30000 \\ \hline 51000 \end{array}$$

$$\boxed{5.1}$$



## Example

Tutor



5. In a recent state Special Olympics meet, Franklin County sent a team of 70 players. Twenty percent of the team competed in soccer. How many athletes competed in soccer?

$$20\% = 0.20$$

Write 20% as a decimal.

$$20\% \text{ of } 70 = 0.2 \times 70$$

Write the multiplication problem.

$$= 14$$

Multiply.

So, 14 team members were soccer players.

**Got It?** Do this problem to find out.

- e. In the same meet, 15% of the team from Delaware County competed in tennis. If there were 20 members on the team, how many competed in tennis?

Show your work.

e. \_\_\_\_\_

$$15\% = .15 \times 20 = 3$$

Handwritten work for problem e:  $15\% = .15 \times 20 = 3$ . The number 3 is circled in green. To the right, there is a vertical multiplication problem:  $20 \times .15 = 3.00$ , with the final result 3 circled in green.

## Guided Practice

Find the percent of each number. (Examples 1-4)

1. 32% of 60 = 19.2

Show your work.

$$\begin{array}{r} 32\% \text{ of } 60 \\ .32 \times 60 \\ \times 60 \\ \underline{192} \\ 1920 \end{array}$$

2. 0.55% of 220 = 1.21

$$\begin{array}{r} 0.0055 \times 220 \\ \times 220 \\ \underline{110} \\ 1100 \\ + 11000 \\ \hline 12100 \end{array}$$

3. 275% of 4 = 11

$$\begin{array}{r} 275\% \text{ of } 4 \\ 2.75 \times 4 \\ \times 4 \\ \underline{110} \\ 1100 \end{array}$$

4. Troy wants to buy a jersey of his favorite MLB team. The jersey is 30% off the original price. If the original price of the jersey is \$35, what is the amount Troy will save? (Example 5) \$10.50

$$30\% \text{ of } 35$$

$$\begin{array}{r} \times 30 \\ 35 \\ \hline 105 \\ + 900 \\ \hline 1050 \end{array}$$

## ***Real-World Percent Trick = Use 10%!***

*Percents are everywhere and very soon you'll find yourself in situations where you have to find a percent of a number to determine important information and amounts, such as discounts and percents. One trick you can use is the 10% trick! Here's how it works:*

Example: Mrs. Galante wants to buy a new winter coat. The original price is \$120, and Mrs. Galante has a coupon for 40% percent off. How much money will she save with the coupon?

**Step 1: Find 10% of the number by dividing by 10.**

**Step 2: Multiply this new amount by the number of times 10 goes into the original percent.**

*Now you try!* Use the 10% Trick to find the following amounts!

1) 60% of 80

2) 20% of 22

3) 15% of 300