

Chapter 19

PERCENT

PERCENT means "per hundred." Percentages are ratios that compare a quantity to 100. For example, 33% means "33 per hundred" and can also be written $\frac{33}{100}$ or 0.33.

SHORTCUT: Any time you have a percent, you can put the number over 100 and get rid of the % sign. Don't forget to simplify the fraction if possible!

EXAMPLES of a percent as a fraction:

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

$$25\% = \frac{25}{100} = \frac{1}{4}$$

EXAMPLES of a fraction as a percent:

$$\frac{11}{100} = 11\%$$

$$\frac{1}{5} = \frac{20}{100} = 20\%$$

THIS IS A PROPORTION!

EXAMPLES of a percent as a decimal:

$$65\% = \frac{65}{100} = 0.65$$

$$6.5\% = \frac{6.5}{100} = 0.065$$

To turn a fraction into a percent, divide the **NUMERATOR** (top of the fraction) by the **DENOMINATOR** (bottom of the fraction).

SHORTCUT: When dividing by 100, just move the decimal point two spaces to the left!

EXAMPLE:

$$\frac{14}{50} = 14 \div 50 = 0.28 = 28\%$$

(Once you get the decimal form of the answer, move the decimal two spaces to the right, then include the % sign at the end.)

REMEMBER:

Any number that doesn't have a decimal point has an "invisible" decimal point at the far right of the number:

14 is the same as 14.0.



LET'S TRY IT AGAIN:

Five out of every eight albums that Latrell owns are jazz.
What percentage of his music collection is jazz?

$$\frac{5}{8} = 5 \div 8 = 0.625 \quad (\text{Move the decimal two spaces to the right and include a percent sign.})$$

Jazz makes up **62.5%** of Latrell's music collection.

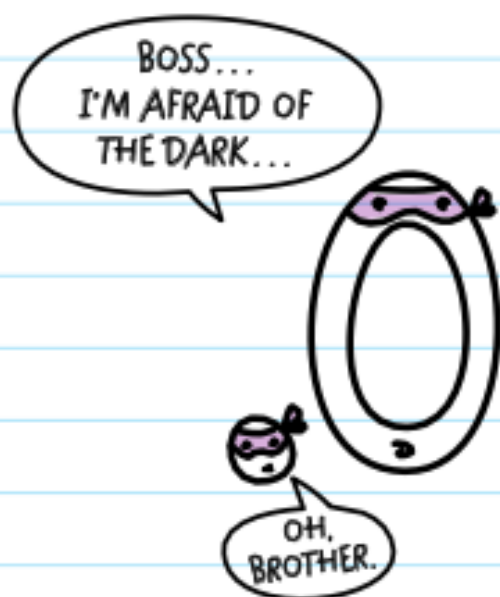
Alternative method: You can also solve problems like this by setting up a proportion, like this:

$$\frac{5}{8} \propto \frac{x}{100}$$

$$8 \cdot x = 5 \cdot 100$$

$$8 \cdot x = 500 \quad (\text{Divide both sides by } 8 \text{ so you can get } x \text{ alone.})$$

$$x = 62.5 \rightarrow 62.5\% \text{ of Latrell's music is jazz.}$$





CHECK YOUR KNOWLEDGE

1. Write 45% as a fraction.

2. Write 68% as a fraction.

3. Write 275% as a fraction.

YOU CAN WRITE
YOUR ANSWER AS AN
IMPROPER FRACTION
OR A MIXED NUMBER.

4. Write 8% as a decimal.

5. Write 95.4% as a decimal.

6. Write 0.003% as a decimal.

7. $\frac{6}{20}$ is what percent?

8. $\frac{15}{80}$ is what percent?

9. In the school election, Tammy received 3 out of every 7 votes. What percent of the votes was this (approximate to the nearest percent)?

10. If you get 17 out of 20 questions correct on your next test, what percent of the test did you answer incorrectly?

ANSWERS

115

CHECK YOUR ANSWERS



1. $\frac{45}{100} = \frac{9}{20}$

2. $\frac{68}{100} = \frac{17}{25}$

3. $\frac{275}{100} = \frac{11}{4}$ or $2\frac{3}{4}$

4. 0.08

5. 0.954

6. 0.00003

7. 30%

8. 18.75%

9. Approximately 43%

10. 15%