

Basics of Percent

Fill in the blanks:

_____ cents in a dollar _____ years in a century

“Percent” means “per hundred”, since the suffix “cent” implies 100. Since 100 has two zeroes in it, then to change between decimals and percents, we’re going to be moving the decimal point **two** places to the right or left because we’re multiplying or dividing by 100. It is **always** two places.

To remember which way to move your decimal point, write “D” for decimal and “P” for percent in alphabetical order: D P. Now, if we’re changing **from** decimal **to** percent, we’re going to move the decimal point two places **from D to P**: D → P.

Write as percents:

1) 0.26

2) 0.256

3) 1.47

4) 0.0032

If we’re changing **from** percent **to** decimal, we’re going to move the decimal point two places **to D from P**: D ← P. Notice that we still write “D” and “P” in alphabetical order!

Write as decimals:

1) 14%

2) 6.9%

3) 414.8%

4) 0.05%

Notice that sometimes we have to put zeroes in as place holders.

Percents and Fractions

There are two ways to change to percents to fractions.

1. Change to decimal first, and then change the decimal into a percent. This only works if the decimal is terminating.

Example: Change 15.5% into a fraction in lowest terms.

$$15.5\% = 0.155 =$$

2. Write the decimal over 100 and simplify.

Example: Change 15.5% into a fraction in lowest terms.

$$\frac{15.5}{100} =$$

The second method works all of the time, so some people prefer it. As a whole, I generally recommend that if the percent we're dealing with contains a decimal number, then change it to a decimal first (Way #1); if the percent we're dealing with contains a fraction, then write it over 100 (Way #2).

Example: Change $16\frac{2}{3}\%$ into a fraction in lowest terms.

$$\frac{16\frac{2}{3}}{100} =$$

Example: Change $87\frac{1}{2}\%$ into a fraction in lowest terms.

We can change this into a decimal if we want to because it results in a terminating decimal: 87.5%. If not, then we can deal with it as a fraction.

Way #1:

Way #2:

Now, if we want to change from fraction to a percent, we can do it two ways as well.

1. If the fraction will divide out to give us a terminating decimal, we can change it into a decimal first, and then move our decimal point.

Example: Write as a percent: $\frac{2}{5}$.

$$\frac{2}{5} = 5 \overline{)2.0} = 0.4 = \underline{\hspace{2cm}}$$

2. If the fraction will result in a repeating decimal, we're going to use a proportion. This method will work all of the time, actually!

Example: Write as a percent: $\frac{1}{3}$.

$$\frac{1}{3} = \frac{x}{100} \quad \leftarrow \text{Solve for "x!"}$$

Write the following as percents:

1) $\frac{3}{8}$

2) $\frac{4}{9}$

3) $\frac{6}{20}$

4) $\frac{5}{6}$