

A Ratio by any Other Name

So, what's the difference between a ratio and a fraction? Not too much. The fractions we've worked with thus far have just been specific ratios: the ratio of how many of something we have (or are interested in) to how many make a whole.

There are several reasons ratios are important.

- 1) They can make conversions easier to understand.
- 2) They can make word problems involving multiplication or division easier to calculate.
- 3) They can make percentages easier to work with.

Given that the three reasons listed above are three of the main things people generally have trouble with in math, ratios may come as somewhat of a relief. Here, we are going to be examining number three in our list.

One thing that we're going to find necessary to remember how to do is how to change fractions into decimals and then decimals into percents.

Changing fractions into decimals: Recall that the following five things mean the same thing.

$$3 \text{ to } 4 \qquad 3 : 4 \qquad \frac{3}{4} \qquad 3 \div 4 \qquad 4 \overline{)3}$$

Changing decimals into percents: To go from a decimal to a percent, we move the decimal point two places to the right. We will talk about this in much more detail in chapter six.

Examples: $0.75 = 75\%$ $0.06 = 6\%$ $0.009 = 0.9\%$ $2.5 = 250\%$

Here's how ratios apply to the above. Remember to write fractions in lowest terms!

Example: Eleven people in a room of 25 people are wearing sneakers.

- a) What fraction of the people in the room is wearing sneakers?
- b) What is the ratio of the number of people in the room wearing sneakers to the total number of people in the room?
- c) What is the decimal that represents the ratio found in part b)?
- d) What percentage of the people in the room is wearing sneakers?

Example: In the past month, the price of gasoline has gone up from \$2.65 a gallon to \$2.99 a gallon.

- a) What is the ratio of the increase of gasoline to its price a month ago?
- b) What is the decimal that represents the ratio found in part a)?
- c) What is the percent of increase of the price of gasoline in the last month?

If you notice, the percent that we are looking for is directly related to the ratio that we are looking for.