

## Elementary Review #3 – Ratios & Percents

A *ratio* is a comparison of one quantity to another. (Not to be confused with *radio*, which is an antiquated way to listening to music.) There are three ways to represent ratios: in words, in “ratio” form (x:y) and as a fraction.

Example 1: Express the following comparisons as ratios.

|                    |       |                 |
|--------------------|-------|-----------------|
| 18 men to 15 women | 18:15 | $\frac{18}{15}$ |
|--------------------|-------|-----------------|

|                      |     |               |
|----------------------|-----|---------------|
| 8 hot dogs to 6 buns | 8:6 | $\frac{8}{6}$ |
|----------------------|-----|---------------|

|                         |       |                 |
|-------------------------|-------|-----------------|
| 27 apples to 36 oranges | 27:36 | $\frac{27}{36}$ |
|-------------------------|-------|-----------------|

Like fractions, ratios can be written in *lowest terms*.

Example 2: Write each of the ratios in Example 1 in lowest terms.

$$18:15 = 6:5$$

$$8:6 = 4:3$$

$$27:36 = 3:4$$

Example 3: If it takes 9 people to carry 16 cats, how many people does it take to carry 96 cats?

$$9:16 = ?:96$$

$$\text{Since } 16 \times 6 = 96, 9 \times 6 = 54 = ?$$

So you need 54 people to carry 96 cats. (Assuming no one is allergic, of course.)

A *percent* is a special ratio where the second quantity is 100. (From latin, *per cent* is literally “out of 100”.)

Example 4: Covert the following percents to fractions and decimals:

$$(a) 35\% = 0.35 = \frac{35}{100} = \left( \frac{7}{20} \right)$$

$$(b) 13\frac{1}{4}\% = 0.1325 = \frac{1325}{10000} = \frac{53}{400}$$

Example 5: Calculate the following. Round your answer to two decimal places, if necessary.

(a) 15% of 78 (11.7)

(b) 45% of 450 (202.5)

(c)  $13\frac{1}{4}\%$  of 28 = 3.71

Activity: 8% of my Love!

Practice: