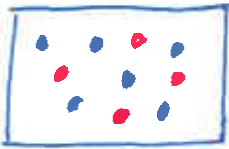


Ratios & Proportions Notes

A ratio is a comparison between 2 numbers measured in the same units. Can be expressed as a fraction, words, or in the form 10:1

↓
said as "to"

How to write ratios?

Part to Part	Part to Whole
write as words or a # : # ex. Blue ; Red 6 : 4 ÷2 ÷2 3 : 2 	Can write as words of fractions ex. Blue Red $\frac{6 \div 2}{10 \div 2} = \frac{3}{5}$ $\frac{4 \div 2}{10 \div 2} = \frac{2}{5}$

Equivalent ratios are

Ratios that are equal to each other but in different terms

How to find an equivalent ratio.

a. $\frac{2}{3} = \frac{10}{15}$
 $\times 5$ $\times 5$

b. $\frac{2}{4} = \frac{1}{2}$

c. $\frac{3}{2} = \frac{9}{6}$
 $\div 2$ $\div 2$

$3 \times 6 = 18$
 $18 \div 9 = 2$

d. $\frac{2}{3} = \frac{24}{36}$

Many problems in math can be solved using proportions!

A proportion is a fractional statement of equality between 2 fractions. We can use this statement to find out an unknown amount.
Setting up and Solving a proportion

Example:

You can go 294 km in 3 hours. How far can you go in 1 hour?

+

or $\frac{294 \text{ km}}{3 \text{ h}} = \frac{\quad}{1 \text{ h}}$ Same units across from each other

X across then divide by the spare

$$294 \text{ km} \times 1 \text{ hr} = 294 \text{ km hrs}$$

$$294 \div 3 = 98$$

Show you know:

1. The Crayola crayon company can make 2400 crayons in 4 minutes. How many crayons can they make in 15 minutes?

$$\frac{2400 \text{ crayons}}{\div 4 \text{ min}} = \frac{\quad}{15 \text{ min}}$$

$$2400 \times 15 \div 4 = 9000$$

2. If you earn \$150.00 in 12 hours, how much will you earn in if you work 40 hours?

500

Part to a Whole Ratios

Ex 2. Bag A contains 12 yellow chips and 18 purple chips. Bag B contains a total of 40 yellow and purple chips. The ratio of yellow to purple chips is the same in each bag. ~~disks and 6 blue disks.~~ How many yellow and purple chips are in Bag B?

Bag A 12 yellow + 18 purple = 30 chips

yellow $\frac{12}{30}$

purple $\frac{18}{30}$

Bag B

yellow and purple total = 40 chips

$$\frac{12 \text{ yel}}{30 \text{ total}} = \frac{\quad}{40 \text{ total}}$$

$$40 \times 12 \div 30 = \underline{16 \text{ yellow chips}}$$

$$40 \text{ total} - 16 \text{ yellow} = \underline{24 \text{ purple}}$$

