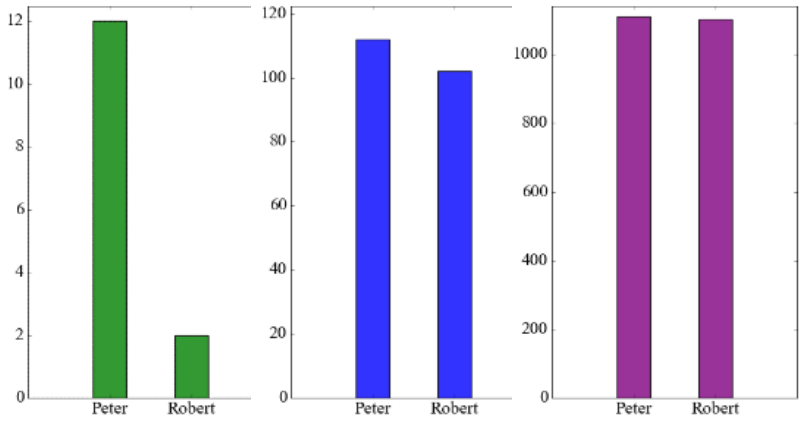
Classwork

Ratio

Peter has 10 dollars more than Robert. Is this a big difference? How we can compare the amount of money they have?
Take a look at the table

Peter	$12	$112	$1112
Robert	$2	$102	$1102



In all these cases the absolute difference is the same, but in the first case Peter has 6 times as much as Robert, in the last situation they both have almost the same amount of money. The ratios of the amount of Peter's money and Robert's money are.

$$\frac{12}{2}; \qquad \frac{112}{102}; \qquad \frac{1112}{1102};$$

The amount of money Peter and Robert have in the first case is 12 and 2 dollars and the ratio is $\frac{12}{2} = 6$, or 6:1, or 6 to 1.

The ratio of two numbers indicates how many times one number is larger than another or which part of one number the other number is.

We can write the ratio of two numbers a and b in the several ways:

$$a \text{ to } b, \qquad a:b, \qquad \frac{a}{b}$$

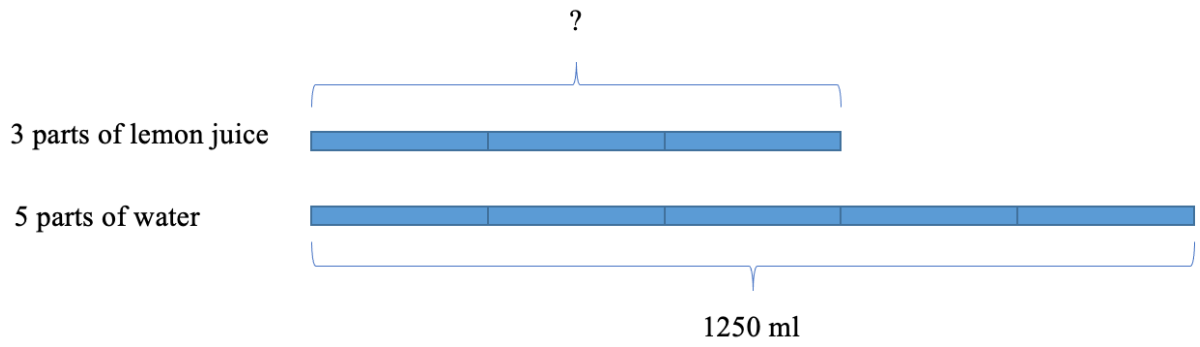
Example1: (it's not a real recipe)

The recipe for lemonade says: mix 3 parts of lemon juice with 5 parts of water.

It means the ratio of lemon juice and water in lemonade is 3 to 5.

How much lemon juice is needed to mix with 1250 ml of water?

Let's draw a diagram to illustrate this:



Suppose each part is p ml.

Then,

$5p = 1250$

$p = 250$

$3p = 3 \times 250 = 750$

Therefore, 750 ml of lemon juice is needed.

Example2:

Mrs Thomas used the following recipe to make a drink:

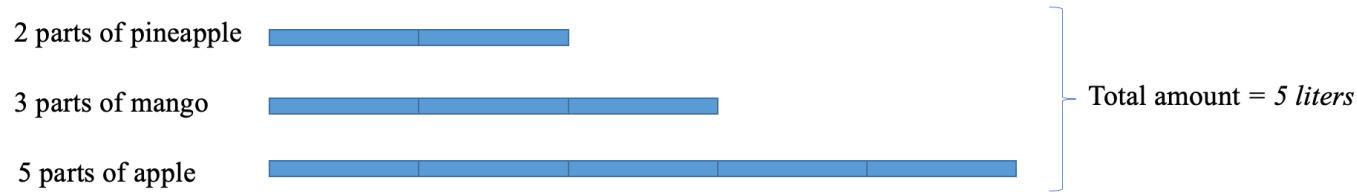
Pineapple juice : 2 parts

Mango juice : 3 parts

Apple juice. : 5 parts

If he wants to make 5 liters of this drink, how much of each type pf juice is needed?

Let us illustrate it with diagram:



Let each part be p.

Then,

$2p + 3p + 5p = 5$

$10p = 5$

$p = \frac{1}{2}$

So, the amount of fruit juice are the following:

Amount of pineapple juice = $2 \times \frac{1}{2} = 1$

Amount of mango juice = $3 \times \frac{1}{2} = 1\frac{1}{2}$

Amount of apple juice = $5 \times \frac{1}{2} = 2\frac{1}{2}$

Homework

1. In a mix of dried fruits, there are 7 parts dried apples, 4 parts dried pears, and 5 parts dried apricots, which means they should be mixed in the ratio 7:4:5. What is the weight, in grams, of the apples, pears, and apricots in the fruit mix if the total weight is 1600g?

2. The ratio of roses to hibiscuses in the garden is 9:11. If there are 99 rose bushes, what is the total number of flower bushes in the garden?

3. Winnie the Pooh can eat 10 kg of honey in 4 hours, and Little Piglet can eat 10 kg of honey in 5 hours. How much honey can they eat together in 3 hours?

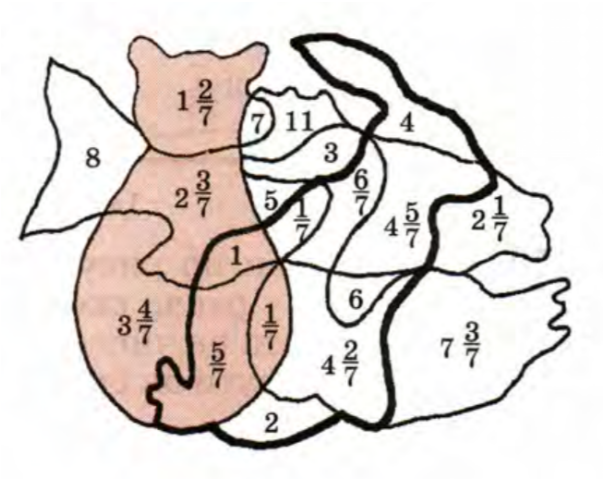
4. The ratio of cashews and walnuts in a nut mixture is 2:3, total weight of the mixture 150g. How much cashews and walnuts are in the pack of mixture?

5. Solve the equations and decipher the highest mountain in USA

A	$5\frac{1}{4} \cdot x = \frac{7}{8}$
E	$c : 1\frac{11}{16} = \frac{4}{9}$
L	$1\frac{2}{3} : x = 2\frac{7}{9}$
I	$4\frac{2}{9} = 6\frac{1}{3} \cdot k$
N	$(14 - x) \cdot 50 = 300$
D	$\frac{1}{9} \cdot y + 48 = 60$

108	$\frac{3}{4}$	8	$\frac{1}{6}$	$\frac{3}{5}$	$\frac{2}{3}$

6. A) Find the sum of the numbers hidden in the cat; rabbit; fish; duck.



B) What number is hidden in the rabbit, cat and fish at the same time?

C) What number is hidden in the rabbit, cat and duck at the same time?

D) What number is hidden in the rabbit, fish and duck at the same time?