

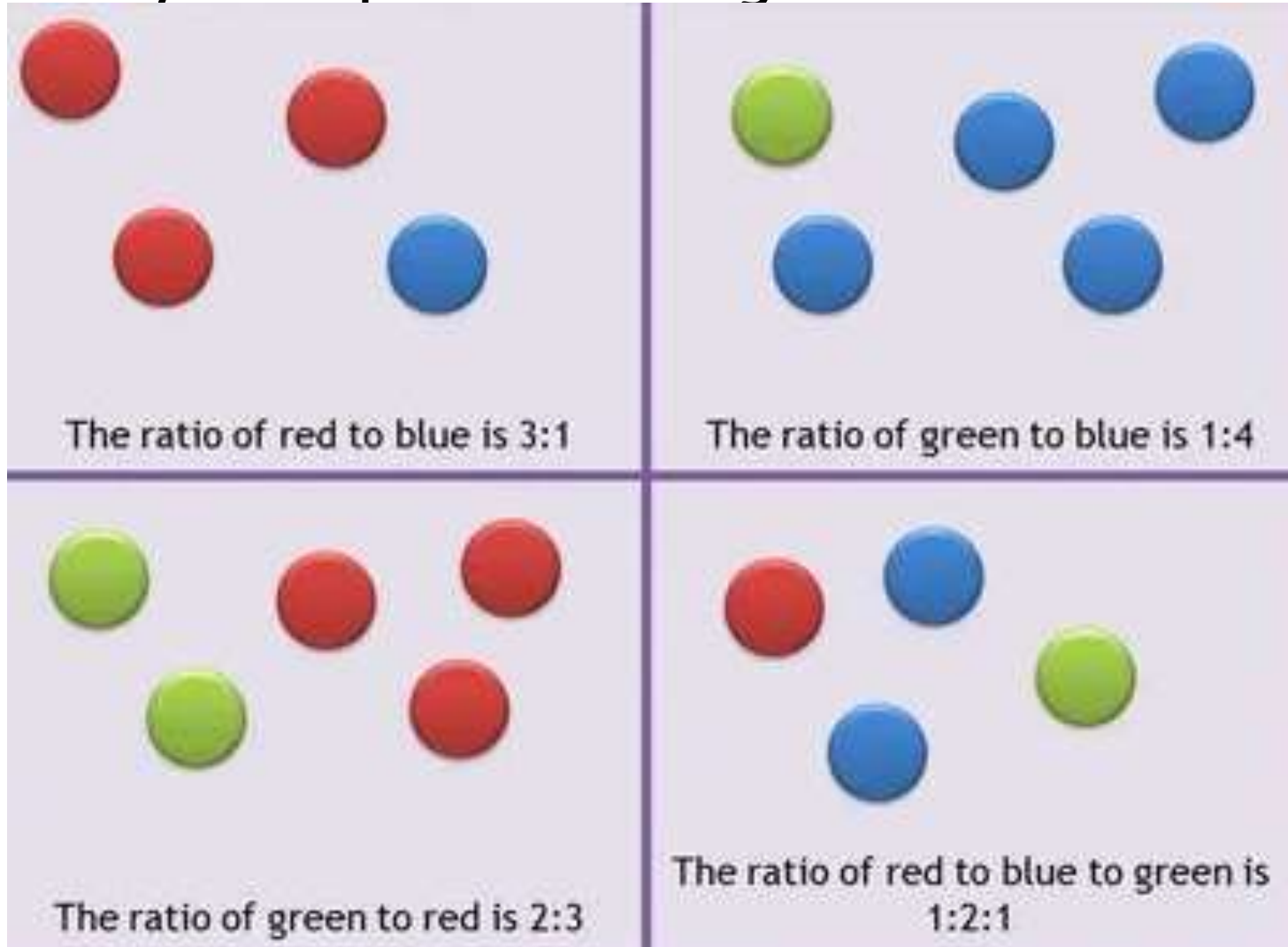
RATIO

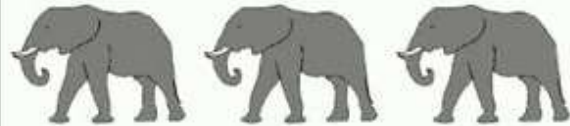
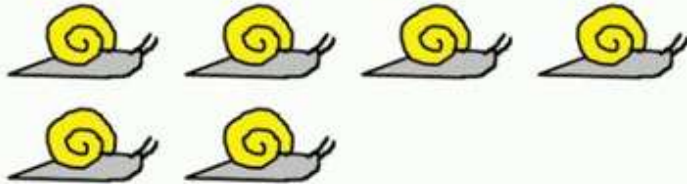
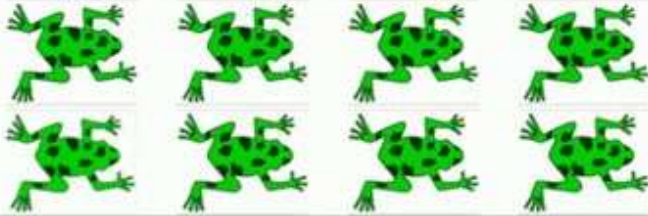
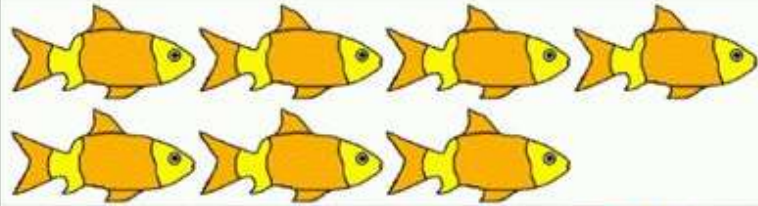
Developed by mathematics teacher
Chistova Svetlana Aleksandrovna

- + add / addition
- subtract / subtraction
- : divide by / division
- × multiply by / multiplication

What is RATIO?

16 boys compared to 20 girls ➔ 16 : 20





1. fish to bears -

2. snails to frogs -

3. bears to frogs -

4. spiders to frogs -

5. elephants to snails -

To simplify ratios,
divide both parts of the ratio by the highest factor.

e.g. $16 : 20 = 4 : 5$ ← Divide both sides by 4.

Task 1 : Simplify the ratio $21 : 28 = _ : _$

← Divide both sides by .

Task 2 : 10 : 4

SHARING A QUANTITY BY A GIVEN RATIO

e.g. 24 children

boys and girls ratio 3 : 5

The three steps for solving these problems are:

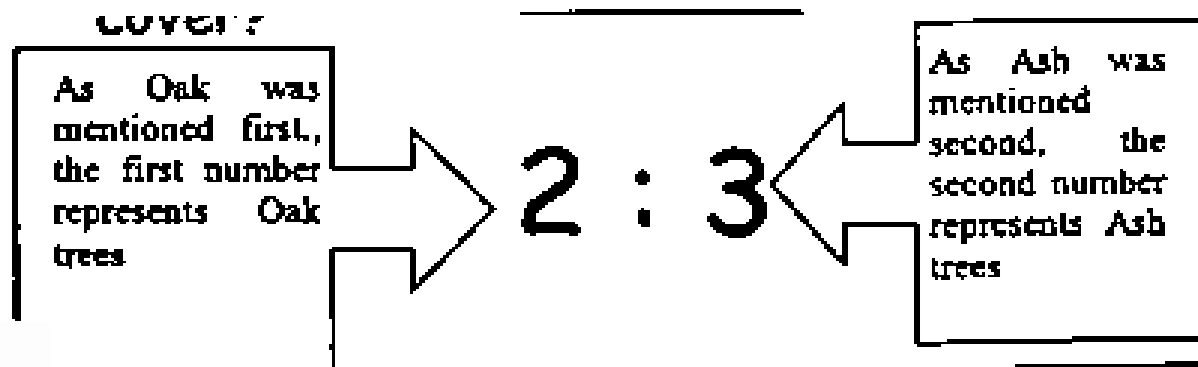
1) Add together the numbers in the ratio to find the total number of parts

2) Find how much one part is worth by dividing by this total.

3) Go back to your original ratio and multiply each number by the value found in step 2

ANSWER

A forest covers 25 000 hectares. Oak and ash trees are planted in the ratio 2 : 3. How many hectares do the ash trees cover?



Step 1: $2 : 3 \rightarrow 2 + 3 = 5$ parts

The value of one part

Step 2: $25\ 000 \div 5 = 5000$ hectares

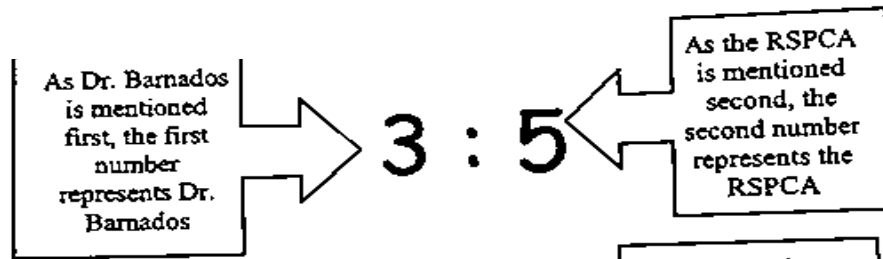
Step 3: Amount of Oak trees
 $= 2 \times 5000 = 10\ 000$ hectares

Amount of Ash trees
 $= 3 \times 5000 = \underline{15\ 000}$ hectares

A
N
S
W
E
R



A school collected £272 for charity. It was decided to divide the money between Dr. Barnados and RSPCA in the ratio 3 : 5. How much did each charity receive?



Step 1: $3 + 5 = 8$ parts

The money is being split into 8 parts altogether.

Step 2: $£272 \div 8 = £34$

Amount to be shared, taken from the question

Total number of parts found in step 1

This is how much each part is worth

Step 3: The amount given to Dr. Barnados :

3 × £34 = £102

Number parts representing Dr. Barnados in the ratio

Value of one part found in Step 2.

Amount given to Dr Barnados

The amount given to the RSPCA is:

5 × £34 = £170

Number parts representing RSPCA in the ratio

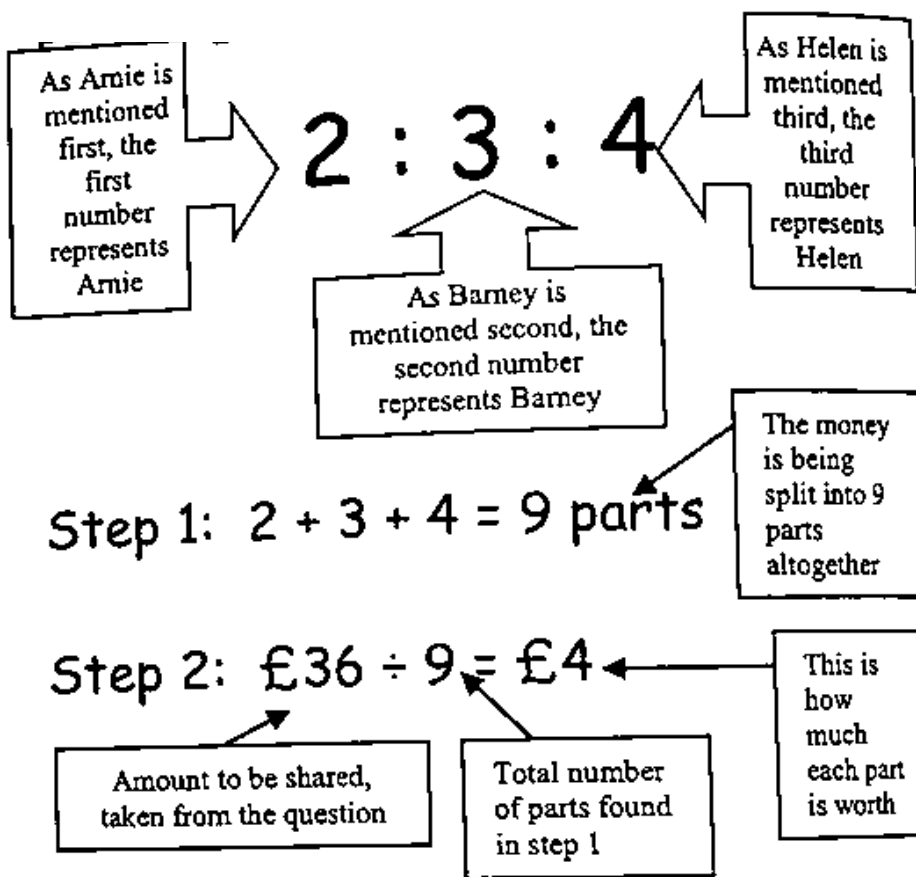
Value of one part found in Step 2.

Amount given to RSPCA

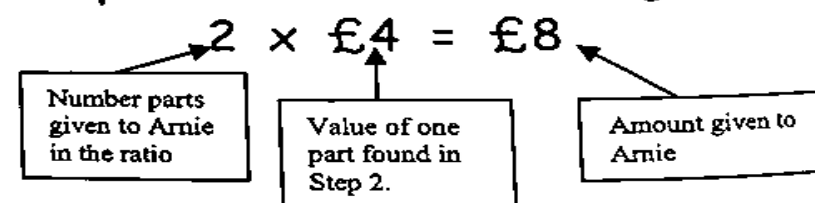
Therefore the answer is:

Dr. Barnados gets £102 and The RSPCA gets £170.

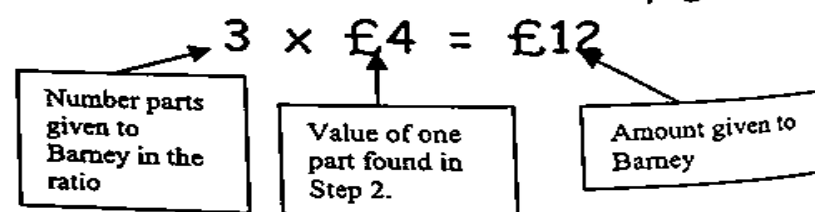
Pocket money is split between Arnie, Barney and Helen in the ratio 2 : 3 : 4. Dad pays out £36. How much does each person get?



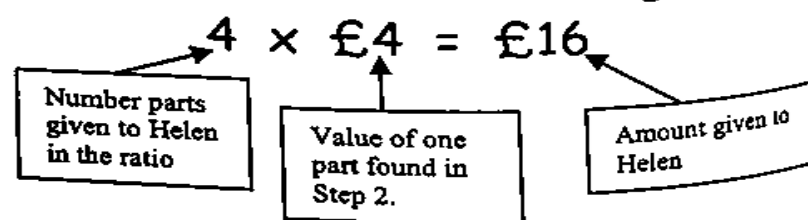
Step 3: The amount Arnie gets:



The amount Barney gets:



The amount Helen gets:



In a bag of 24 sweets, the ratio of red sweets to blue sweets is 3 : 5. How many blue sweets are there?

A class of 30 children has girls to boys ratio 7 : 8. How many girls are there in the class?

In a sandwich bar a total of 160 sandwiches were sold last Saturday. The ratio of ham to egg to chicken is 5 : 2 : 1. How many of each sandwich was sold?

Concrete for foundation is made by mixing cement, sand and aggregate in the ratio 1 : 3 : 6/ A building firm needs 65 cubic feet of concrete for a garage. How many cubic feet of cement, sand and aggregate should they use?

£54 is split between Jo, Tracey and Alex in the ratio
 $1 : 2 : 3$. How much money does each child get?

- 6) Mr Alan, Mr Book and Mr Collins own 2, 3 and 5 parts of a business respectively. The business made £570 profit last week. How much does each man get?
- 7) £75 is split between Andrew, Sam and Tim in the ratio 3 : 5 : 7. How much does each one get?
- 8) Mr Happy has an orchard of apple and pear trees. The trees are planted in the ratio 3 : 2. He has 150 trees. How many pear trees does Mr Happy have?