Questions

Q1.

There are only red buttons, yellow buttons and orange buttons in a jar.
The number of red buttons, the number of yellow buttons and the number of orange buttons are in the ratio 7 : 4 : 9

Work out what percentage of the buttons in the jar are orange.

.... %

Q2.
In a breakfast cereal, 40% of the weight is fruit.
The rest of the cereal is oats.

(a) Write down the ratio of the weight of fruit to the weight of oats.
Give your answer in the form 1 : n.

....

(2)

A different breakfast cereal is made using only fruit and bran.
The ratio of the weight of fruit to the weight of bran is 1 : 3

(b) What fraction of the weight of this cereal is bran?

....

(1)

Q3.
Raya buys a van for £8500 plus VAT at 20%

Raya pays a deposit for the van.
She then pays the rest of the cost in 12 equal payments of £531.25 each month.

Find the ratio of the deposit Raya pays to the total of the 12 equal payments.
Give your answer in its simplest form.

....

Q4.
Ewen has 48 white tiles and 16 blue tiles.

(a) Write down the ratio of the number of white tiles to the number of blue tiles.
Give your ratio in its simplest form.

....

(2)

The cost of each white tile was £2
The cost of each blue tile was £4

(b) Work out the ratio of the total cost of the white tiles to the total cost of the blue tiles.

....

(2)

Q5.
Carlo puts tins into small boxes and into large boxes.

He puts 6 tins into each small box.
He puts 20 tins into each large box.

Carlo puts a total of 3000 tins into the boxes so that

number of tins in small boxes : number of tins in large boxes = 2 : 3

Carlo says that less than 30% of the boxes filled with tins are large boxes.

Is Carlo correct?
You must show all your working.

Q6.
Scott wants to make orange juice.
He is going to buy boxes of oranges.

| There are 24 oranges in each box of oranges. |
| 30 oranges make 2 litres of orange juice. |

Scott needs to buy enough oranges to make 8 litres of orange juice.

(a) Work out the number of boxes of oranges that Scott needs to buy.

You must show all your working.

....

(3)

Scott also buys

    1260 apples
     280 bananas

(b) Write down the ratio of the number of apples that Scott buys to the number of bananas that he buys.

   Give your ratio in its simplest form.

....

(2)

Q7.
A shop sells packs of black pens, packs of red pens and packs of green pens.

There are

   2 pens in each pack of black pens
   5 pens in each pack of red pens
   6 pens in each pack of green pens

On Monday,

$$\frac{\text{number of packs}}{\text{of black pens sold}} : \frac{\text{number of packs}}{\text{of red pens sold}} : \frac{\text{number of packs}}{\text{of green pens sold}} = 7:3:4$$

A total of 212 pens were sold.

Work out the number of green pens sold.

....

Q8.
There are 60 people in a choir.
Half of the people in the choir are women.

The number of women in the choir is 3 times the number of men in the choir.
The rest of the people in the choir are children.

        the number of children in the choir : the number of men in the choir = n : 1

Work out the value of n.
You must show how you get your answer.

n = ...

Q9.
Costcorp sells packets of mints to shop owners.

On Monday three shop owners buy mints from Costcorp.
Each shop owner buys small packets, medium packets and large packets of mints.

Alan buys 400 packets of mints.

  32 % are small packets.
  40 % are large packets.

Beryl buys 500 packets of mints.

$\frac{3}{10}$ are small packets.

$\frac{1}{10}$ are large packets.

Charlie buys 150 small packets of mints so that

  number of small packets : number of medium packets = 3 : 4

Work out the total number of medium packets of mints these shop owners buy.
You must show all your working.

....

Q10.
Pens and pencils are sold in a shop.

12 pencils cost £1.80

The ratio of the cost of a pen to the cost of a pencil is 7 : 3

Work out the cost of 5 pens.

£ ....

Q11.
(a) Write £4.20 : £1.40 : £7 in its simplest form.

....

(2)

(b) Write a number on the dotted line to complete the statement 6 : 4 = ... : 1

(1)

Q12.

Debra recorded the favourite colour of each of the 30 students in her class.

The incomplete table shows some information about her results.

Colour	Number of students
red	7
green	6
yellow	5
blue	10
other	

(a) Complete the table for Debra's results.

(1)

(b) What is the modal colour?

....

(1)

Mark asked each student in a different class to name their favourite colour.

For this class,
the number of students who said blue is three times the number of students who said green.

(c) Write down the ratio of
the number of students who said blue to the number of students who said green.

....

(1)

(Total for question = 3 marks)

Q13.

In a bag there are only red counters, blue counters, green counters and yellow counters.
A counter is taken at random from the bag.

The table shows the probabilities of getting a red counter or a yellow counter.

Colour	red	blue	green	yellow
Probability	0.4	....	....	0.25

   the number of blue counters : the number of green counters = 3 : 4

Complete the table.

Q14.
In a tin of baked beans,

   weight of beans : weight of tomatoes : weight of other ingredients = 3 : 2 : 1

There are 150 g of tomatoes in the tin.

Work out the weight of the beans.

.... g

Q15.
Azmol, Ryan and Kim each played a game.

Azmol's score was four times Ryan's score.
Kim's score was half of Azmol's score.

Write down the ratio of Azmol's score to Ryan's score to Kim's score.

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