

1 Annie and Lily share some money in the ratio 4 : 3

(a) What fraction of the money does Lily get?

.....
(1)

Rosie and Dan share some sweets.

Dan gets $\frac{1}{4}$ of the sweets.

(b) Write down the ratio of the number of sweets Rosie gets to the number of sweets Dan gets.

.....
(1)

(Total for Question 1 is 2 marks)

2 The table shows a cricket club's income in 2016 from a fete, a quiz and membership fees.

	Income	
Fete	£250	
Quiz	Entry fees	13 at £5 each
	Refreshments	£35
Membership fees	25 at £20 each	

Express as a ratio

the income from the fete to the income from the quiz to the income from membership fees.

Give your ratio in its simplest form.

.....
(Total for Question 2 is 3 marks)

- 3 A farmer has 20 boxes of eggs.
There are 6 eggs in each box.

Write, as a ratio, the number of eggs in two boxes to the total number of eggs.
Give your answer in its simplest form.

.....
(Total for Question 3 is 2 marks)

- 4 A path is made of white tiles and grey tiles.

$\frac{1}{4}$ of the tiles are white.

- (a) Write down the ratio of white tiles to grey tiles.

.....
(1)

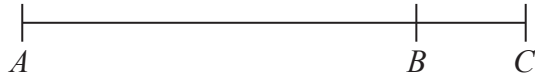
There is a total of 56 tiles.

- (b) Work out the number of grey tiles.

.....
(2)

(Total for Question 4 is 3 marks)

5 ABC is a straight line.



The length AB is five times the length BC .

$AC = 90$ cm.

Work out the length AB .

.....cm

(Total for Question 5 is 3 marks)

- 6 Write down the ratio of 450 grams to 15 grams.
Give your answer in its simplest form.

.....
(Total for Question 6 is 2 marks)

- 7 Gavin, Harry and Isabel each earn the same monthly salary.

Each month,

Gavin **saves** 28% of his salary and spends the rest of his salary

Harry spends $\frac{3}{4}$ of his salary and **saves** the rest of his salary

the amount of salary Isabel saves : the amount of salary she spends = 3 : 7

Work out who saves the most of their salary each month.

You must show how you get your answer.

(Total for Question 7 is 4 marks)

8 There are some chocolates in a box.

$\frac{1}{4}$ of the chocolates contain nuts.

The rest of the chocolates do not contain nuts.

Write down the ratio of the number of chocolates that contain nuts to the number of chocolates that do not contain nuts.

Give your answer in the form $1 : n$

(Total for Question 8 is 2 marks)

9 Alan, Bispah and Chan share a sum of money.

Alan gets $\frac{1}{8}$ of the money.

Bispah gets $\frac{1}{2}$ of the money.

Chan gets the rest of the money.

Alan gets £2.50

(a) Work out how much money Bispah gets.

£.....
(2)

(b) Find the ratio

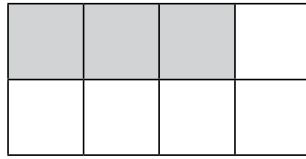
amount of money Alan gets : amount of money Chan gets

Give your answer in the form $a:b$ where a and b are whole numbers.

.....
(3)

(Total for Question 9 is 5 marks)

10 Here is a grid of squares.



Write down the ratio of the number of shaded squares to the number of unshaded squares.

.....

(Total for Question 10 is 1 mark)

Summer 2019 Paper 2 Q14

11 Write the ratio $4.5 : 2.25$ in the form $n : 1$

.....

(Total for Question 11 is 1 mark)

Summer 2019 Paper 3 Q12

12 Ali, Ben and Cathy share an amount of money in the ratio $6 : 9 : 10$

What fraction of the money does Ben get?

.....

(Total for Question 12 is 2 marks)

13 (a) A bag contains red counters and blue counters only.

number of red counters : number of blue counters = 3 : 4

Write down the fraction of the counters that are red.

.....
(1)

(b) Write the ratio 12 : 30 in the form 1 : n

.....
(2)

(Total for Question 13 is 3 marks)

14 Amol, Gemma and Harry each have a number of sweets.

The number of sweets that Gemma has is 6 times the number of sweets that Amol has.
The number of sweets that Harry has is half the number of sweets that Gemma has.

Write down the ratio

the number of sweets : the number of sweets : the number of sweets
that Amol has : that Gemma has : that Harry has

.....
(Total for Question 14 is 2 marks)

15 Rob has been asked to divide 120 in the ratio 3:5

Here is his working.

$$120 \div 3 = 40 \qquad 120 \div 5 = 24$$

Rob's working is not correct.

Describe what Rob has done wrong.

.....

.....

.....

(Total for Question 15 is 1 mark)

23 Work out 54.6×4.3

MIDDLE

PAGE

- 16** 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.

..... %

(Total for Question 16 is 2 marks)

- 17** Harry, Regan and Kelan share £450 in the ratio 2 : 5 : 3

How much money does Kelan get?

£.....

(Total for Question 17 is 2 marks)

- 18** Kiaria is 7 years older than Jay.
Martha is twice as old as Kiaria.
The sum of their three ages is 77

Find the ratio of Jay's age to Kiaria's age to Martha's age.

.....
(Total for Question 18 is 4 marks)

Autumn 2017 Paper 3 Q15

19 The ratio of the cost of one metre of cotton fabric to the cost of one metre of silk fabric is 2 : 5

Complete the table of costs.

	2 m	6 m	8 m	9 m
cotton fabric	£6			
silk fabric				

(Total for Question 19 is 3 marks)

Autumn 2018 Paper 1 Q13

20 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.

.....
(Total for Question 20 is 2 marks)

21 There are only blue pens, green pens and red pens in a box.

The ratio of the number of blue pens to the number of green pens is 2 : 5

The ratio of the number of green pens to the number of red pens is 4 : 1

There are less than 100 pens in the box.

What is the greatest possible number of red pens in the box?

.....
(Total for Question 21 is 3 marks)

22 Daniel bakes 420 cakes.

He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

$\frac{2}{7}$ of the cakes are vanilla cakes.

35% of the cakes are banana cakes.

The ratio of the number of lemon cakes to the number of chocolate cakes is 4:5

Work out the number of lemon cakes Daniel bakes.

.....
(Total for Question 22 is 5 marks)

23 In a village

the number of houses and the number of flats are in the ratio 7 : 4

the number of flats and the number of bungalows are in the ratio 8 : 5

There are 50 bungalows in the village.

How many houses are there in the village?

.....
(Total for Question 23 is 3 marks)

24 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.

.....
(Total for Question 24 is 5 marks)

25 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.

$n = \dots\dots\dots$

(Total for Question 25 is 4 marks)

26 Tom and Adam have a total of 240 stamps.

The ratio of the number of Tom's stamps to the number of Adam's stamps is 3 : 7

Tom buys some stamps from Adam.

The ratio of the number of Tom's stamps to the number of Adam's stamps is now 3 : 5

How many stamps does Tom buy from Adam?

You must show all your working.

.....
(Total for Question 26 is 4 marks)

27 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,

number of packs of black pens sold : number of packs of red pens sold : number of packs of green pens sold = 7:3:4

A total of 212 pens were sold.

Work out the number of green pens sold.

.....
(Total for Question 27 is 4 marks)

28 £360 is shared between Abby, Ben, Chloe and Denesh.

The ratio of the amount Abby gets to the amount Ben gets is 2:7

Chloe and Denesh each get 1.5 times the amount Abby gets.

Work out the amount of money that Ben gets.

£.....

(Total for Question 28 is 4 marks)

29 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.

.....
(Total for Question 29 is 5 marks)

30 Given that $\frac{a}{b} = \frac{2}{5}$ and $\frac{b}{c} = \frac{3}{4}$

find $a:b:c$

(Total for Question 30 is 3 marks)

31 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.

£.....

(Total for Question 31 is 4 marks)

32 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

$$\text{number of tins in small boxes} : \text{number of tins in large boxes} = 2:3$$

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

Is Carlo correct?

You must show all your working.

(Total for Question 32 is 5 marks)

33 There are two drama groups in a school.

In one group there are 36 boys and 48 girls.

In the other group, $\frac{3}{7}$ of the students are boys and the rest of the students are girls.

Ann says,

“The ratio of the number of boys to the number of girls is the same for both groups.”

Is Ann correct?

You must show how you get your answer.

(Total for Question 33 is 3 marks)

34 Rosie, Matilda and Ibrahim collect stickers.

$$\begin{array}{ccccccc} \text{number of stickers} & & \text{number of stickers} & & \text{number of stickers} & & \\ \text{Rosie has} & : & \text{Matilda has} & : & \text{Ibrahim has} & = & 4:7:15 \end{array}$$

Ibrahim has 24 more stickers than Matilda.

Ibrahim has more stickers than Rosie.
How many more?

.....
(Total for Question 34 is 3 marks)

35 In the Northern hemisphere the ratio of the area of land to the area of water is 2 : 3

(a) Work out what percentage of the area of the Northern hemisphere is land.

.....%
(2)

20% of the area of the Southern hemisphere is land.

(b) Work out the ratio of the area of land to the area of water in the Southern hemisphere.

.....
(2)

(Total for Question 35 is 4 marks)

36 Natalie makes potato cakes in a restaurant.

She mixes potato, cheese and onion so that

$$\text{weight of potato} : \text{weight of cheese} : \text{weight of onion} = 9 : 2 : 1$$

Natalie needs to make 6000 g of potato cakes.

Cheese costs £2.25 for 175 g.

Work out the cost of the cheese needed to make 6000 g of potato cakes.

£.....

(Total for Question 36 is 4 marks)

- 37 There are 240 cans of drink on a shelf.
Each can contains cola or lemonade or orange.

$$\begin{array}{l} \text{the number of cans} \\ \text{of cola} \end{array} : \begin{array}{l} \text{the number of cans} \\ \text{of lemonade} \end{array} : \begin{array}{l} \text{the number of cans} \\ \text{of orange} \end{array} = 5:3:2$$

$\frac{1}{2}$ of the cans of lemonade and $\frac{1}{12}$ of the cans of orange are removed from the shelf.

Work out the number of cans of cola as a percentage of the total number of cans of drink remaining on the shelf.

.....%

(Total for Question 37 is 5 marks)

38 Rizwan writes down three numbers a , b and c

$$a:b = 1:3$$

$$b:c = 6:5$$

(a) (i) Find $a:b:c$

.....
(2)

(ii) Express a as a fraction of the total of the three numbers a , b and c

.....
(2)

Emma writes down three numbers m , n and p

$$n = 2m$$

$$p = 5n$$

(b) Find $m:p$

.....
(2)

(Total for Question 38 is 6 marks)

39 A delivery company has a total of 160 cars and vans.

the number of cars : the number of vans = 3 : 7

Each car and each van uses electricity or diesel or petrol.

$\frac{1}{8}$ of the cars use electricity.

25% of the cars use diesel.

The rest of the cars use petrol.

Work out the number of cars that use petrol.

You must show all your working.

.....
(Total for Question 39 is 5 marks)

40 Rick, Selma and Tony are playing a game with counters.

Rick has some counters.

Selma has twice as many counters as Rick.

Tony has 6 counters less than Selma.

In total they have 54 counters.

the number of counters Rick has : the number of counters Tony has = $1 : p$

Work out the value of p .

$p =$

(Total for Question 40 is 5 marks)