

1.8

Ratio

Mr Faruk

Teacher of Mathematics
BSc/MSc/PGCE Mathematics

✉ ciegcsesolutions@gmail.com



13 Here is a list of ingredients needed to make **one** lemon cake.

<p style="text-align: center;">Lemon cake</p> <p style="text-align: center;">Ingredients</p> <p>125 g butter</p> <p>175 g sugar</p> <p>175 g flour</p> <p>60 ml milk</p> <p>2 eggs</p> <p>$1\frac{1}{2}$ lemons</p> <p>100 g icing sugar</p>

- (a) Write down the ratio of the weight of butter to the weight of flour.
Give your ratio in its simplest form.

.....

(2)

Alison wants to make some of these lemon cakes to sell at a school fair.
She only has 750 g of butter and 8 lemons.
She has plenty of all the other ingredients.

- (b) Work out the greatest number of these lemon cakes Alison can make.

.....

(2)

January 2018 2FR

14 A bag contains only red marbles and green marbles.

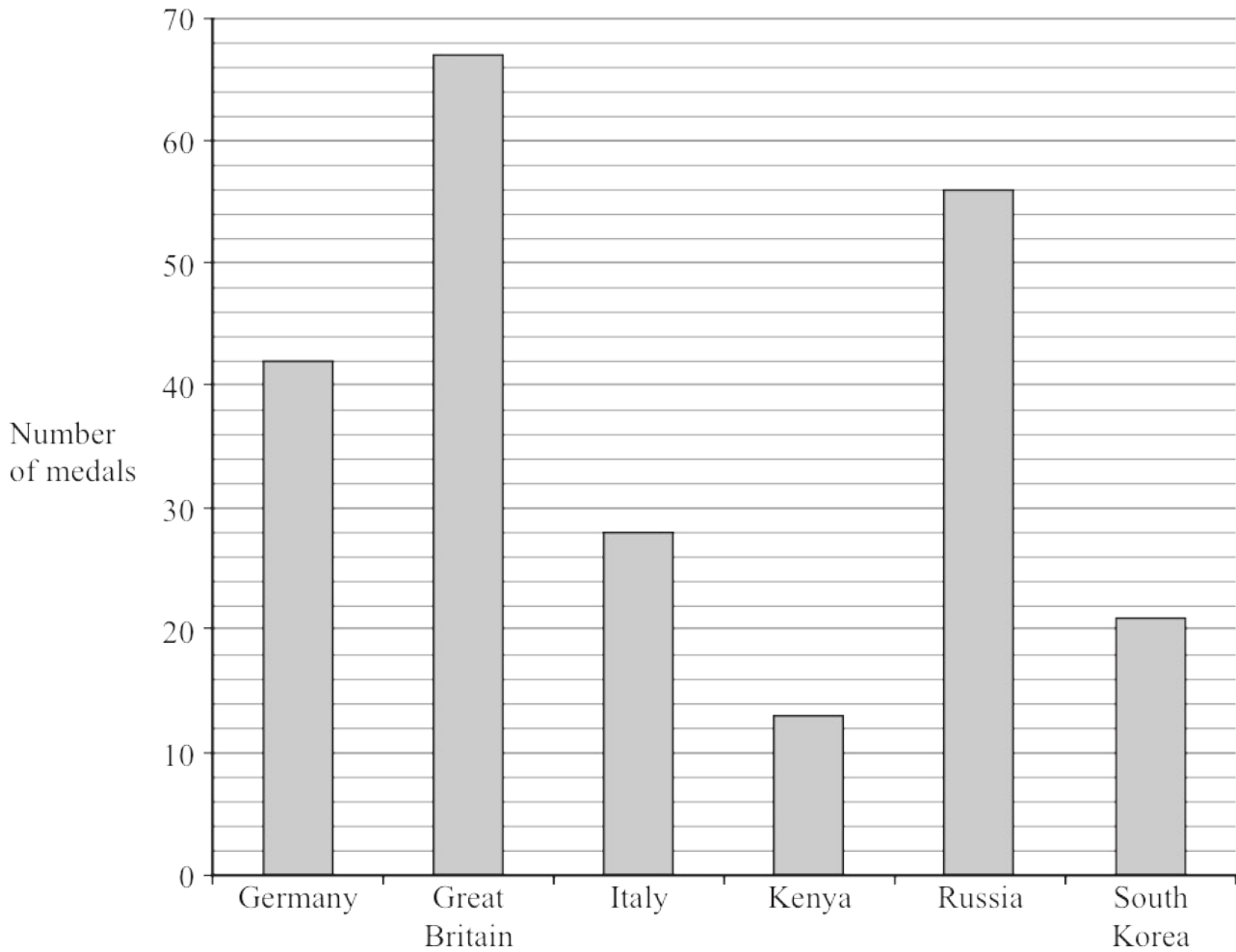
The bag contains a total of 400 marbles.

The ratio of the number of red marbles to the number of green marbles is 5 : 3

How many more red marbles are there than green marbles in the bag?

.....
(Total for Question 14 is 3 marks)

- 2 The bar chart gives information about the total number of medals won by each of six countries at the 2016 Olympic Games.



- (c) Write down the ratio of the total number of medals won by Russia to the total number of medals won by Germany.
Give your ratio in its simplest form.

.....
(2)

13 There are some people in a cinema.

$\frac{3}{5}$ of the people in the cinema are children.

For the children in the cinema,

$$\text{number of girls} : \text{number of boys} = 2 : 7$$

There are 170 girls in the cinema.

Work out the number of adults in the cinema.

- 16** Work out the difference between the largest share and the smallest share when 3450 yen is divided in the ratios 2 : 6 : 7

..... yen

(Total for Question 16 is 3 marks)

- 19** Anna and Lionel share \$675 in the ratio 4 : 5

Lionel gives $\frac{3}{5}$ of his share of the money to his mother.

How much money does Lionel give to his mother?

\$.....

(Total for Question 19 is 3 marks)

10 All the teachers at a school are either left footed or right footed.

At the school

the number of left footed teachers : the number of right footed teachers = 3 : 13

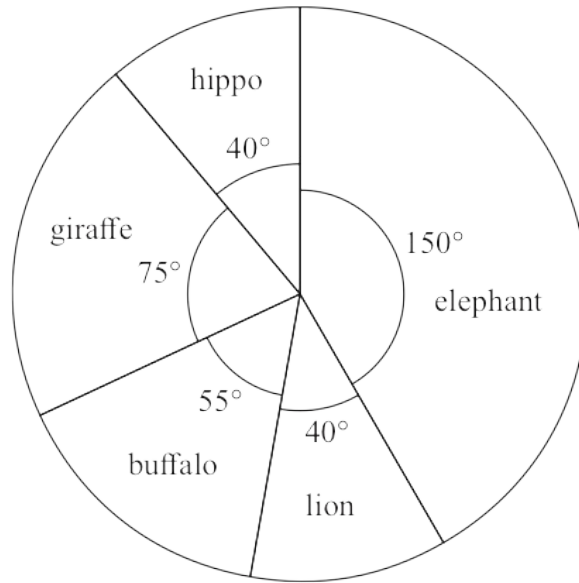
At the school, there are 18 left footed teachers.

(b) How many right footed teachers are there?

(2)

- 10 Jerry went on holiday to a game reserve.
He recorded the number of each of five different types of animal he saw.

The pie chart below gives information about his results.



- (a) Write down the ratio of the number of elephants Jerry saw to the number of giraffes he saw.
Give your ratio in its simplest form.

(2)

17 There are 60 children in a club.

In the club, the ratio of the number of girls to the number of boys is 3 : 1

$\frac{3}{5}$ of the girls play a musical instrument.

$\frac{4}{5}$ of the boys play a musical instrument.

What fraction of the 60 children play a musical instrument?

(Total for Question 17 is 4 marks)

17 In a box,

number of red buttons : number of blue buttons = 5 : 3

number of blue buttons : number of green buttons = 1 : 2

There are 48 green buttons in the box.

Work out the number of red buttons in the box.

(Total for Question 17 is 4 marks)

2

In Manila, there are 90 badminton clubs and 60 football clubs.

- (e) Find the ratio of the number of badminton clubs to the number of football clubs.
Give your ratio in its simplest form.

.....
(2)

- 11 Calvin and Jenny are planning a holiday together.

The total cost of the flights is £1190

Calvin and Jenny share the cost of the flights so that

the money that Calvin pays : the money that Jenny pays = 2 : 5

- (a) How much more money does Jenny pay than Calvin?

£
(3)

- 24 3 years ago, the ratio of Tom's age to Clemmie's age was 2 : 7
Tom is now 15 years old and Clemmie is now x years old.

Find the value of x .

$x = \dots\dots\dots$

(Total for Question 24 is 3 marks)

- 14 Maria is going to make blackcurrant pies.
Here is a list of ingredients to make 6 blackcurrant pies.

<p style="text-align: center;">Blackcurrant pies Ingredients for 6 pies</p> <p style="text-align: center;">150 g flour 420 g blackcurrants 170 g sugar 95 g butter</p>

Maria has the following ingredients.

755 g of flour	1265 g of blackcurrants
685 g of sugar	950 g of butter

Work out the greatest number of blackcurrant pies that Maria can make using her ingredients.
Show your working clearly.

- 22 A football team played 55 games.
Each game was won, drawn or lost.

number of games won : number of games drawn : number of games lost = 6 : 3 : 2

Work out how many more games the team won than the team lost.

(Total for Question 22 is 3 marks)

January 2020 1F

- 10 (a) Write the ratio 32 : 80 in its simplest form.

(2)

There are only red counters and blue counters in a bag.

In the bag

the number of red counters : the number of blue counters = 5 : 7

- (b) What fraction of the counters in the bag are red?

(1)

January 2020 1F

- 18** 120 children go on an activity holiday.
The ratio of the number of girls to the number of boys is 3 : 5

On Sunday, all the children either go sailing or go climbing.

$\frac{16}{25}$ of the boys go climbing.

Twice as many girls go sailing as go climbing.

Work out how many children go sailing on Sunday.

(Total for Question 18 is 6 marks)

- 14 Brendon, Asha and Julie share some money in the ratios 3 : 2 : 6
The **total** amount of money that Asha and Julie receive is \$36

Work out the amount of money that Brendon receives.

S.....

(Total for Question 14 is 3 marks)

17 Here is a list of ingredients needed to make apple crumble for 6 people.

Apple Crumble
Ingredients for 6 people
12 apples 150g butter 195g flour 90g oats 120g sugar

Nadiya wants to make apple crumble for 14 people.

(a) Work out the amount of butter she needs.

.....g
(2)

Alison makes apple crumble for a group of people.

She uses 630g of oats.

(b) Work out the number of people in the group.

.....
(2)

At a cake sale, Michael sells some lemon cakes and some chocolate cakes.

the number of lemon cakes he sells : the number of chocolate cakes he sells = 2 : 7

Michael sells a total of 162 cakes.

(c) Work out the number of lemon cakes Michael sells.

(2)

19 Andreas, Isla and Paulo share some money in the ratios 3 : 2 : 5

The **total** amount of money that Isla and Paulo receive is £76 more than the amount of money that Andreas receives.

Andreas buys a video game for £48.50 with some of his share of the money.

Work out how much money Andreas has left from his share of the money when he has bought the video game.

£.....

(Total for Question 19 is 4 marks)

17 Pieter owns a currency conversion shop.

Last Monday, Pieter changed a total of 20 160 rand into a number of different currencies.

He changed $\frac{3}{10}$ of the 20 160 rand into euros.

He changed the rest of the rands into dollars, rupees and francs in the ratios 9:5:2

Pieter changed more rands into dollars than he changed into francs.

Work out how many more.

..... rand

(Total for Question 17 is 4 marks)

- 8 Paolo has a bag of flour.
The flour in the bag has a weight of 3 kilograms.

Paolo makes 8 pies using the flour in the bag.

3 of the pies each need 150 grams of the flour.

5 of the pies each need 180 grams of the flour.

Work out the weight of flour that remains in the bag when Paolo has made these pies.
Give your answer in grams.

..... grams

(Total for Question 8 is 3 marks)

12 Rose and Haydn share £250 in the ratio 2 : 3

Rose gives all her share of the money to charity.

Haydn gives 42% of his share of the money to charity.

Rose gives more money to charity than Haydn gives to charity.

Work out how much more.

£.....

(Total for Question 12 is 5 marks)

6 Mikhal has 1200 grams of cake mixture.

He is going to make 3 cakes, cake *A*, cake *B* and cake *C*.

$\frac{4}{15}$ of the weight of the cake mixture will be used to make cake *A*.

The rest of the cake mixture will be used to make cake *B* and cake *C*.

The weight of the cake mixture used to make cake *B* and the weight of the cake mixture used to make cake *C* will be in the ratio 3 : 8

Work out the weight of the cake mixture used to make each of cake *A*, cake *B* and cake *C*.

Cake *A* grams

Cake *B* grams

Cake *C* grams

(Total for Question 6 is 4 marks)

10 Here is a list of ingredients needed to make 24 currant buns.

Ingredients for 24 currant buns	
100 grams	butter
70 grams	sugar
140 grams	flour
40 grams	currants
30 millilitres	milk
2	eggs

Gina wants to make 60 currant buns.

(a) Work out the weight of butter Gina needs.

..... grams
(2)

19 On a farm there are chickens, ducks and pigs.

The ratio of the number of chickens to the number of ducks is 7:2

The ratio of the number of ducks to the number of pigs is 5:9

There are 36 pigs on the farm.

Work out the number of chickens on the farm.

(Total for Question 19 is 3 marks)

2

In one match, Sevilla played Valencia.

In the match, Sevilla had 8 shots on target and Valencia had 12 shots on target.

(d) Write the ratio 8:12 in its simplest form.

.....
(1)

January 2022 1F

17 Danil, Gabriel and Hadley share some money in the ratios 3 : 5 : 9

The difference between the amount of money that Gabriel receives and the amount of money that Hadley receives is 196 euros.

Work out the amount of money that Danil receives.

..... euros

(Total for Question 17 is 3 marks)

15 Here is a list of the ingredients needed to make 12 chocolate brownies.

<p style="text-align: center;">Chocolate brownies Ingredients for 12 brownies</p> <p>150 g flour 250 g chocolate spread 3 eggs</p>

Thalia buys exactly enough of these ingredients to make 120 of these brownies.

1.5 kg of flour costs £1.30

500 g of chocolate spread costs £2.60

6 eggs cost £1.10

Thalia sells all 120 brownies at £0.40 each.

Work out the profit that she makes.

£.....

(Total for Question 15 is 5 marks)

9 In November, Andre received a monthly salary of 2500 euros.

Of this he spent

40% on his rent

300 euros on leisure

The rest of Andre's monthly salary was spent on household bills and on food where

the amount spent on household bills : the amount spent on food = 3 : 7

Work out how much of his November monthly salary Andre spent on food.

..... euros

(Total for Question 9 is 4 marks)

7 (a) Write the ratio $42 : 96$ in its simplest form.

.....
(2)

There are only apples and pears in a fruit basket so that
the number of apples : the number of pears = $4 : 11$

(b) What fraction of the fruit in the basket is pears?

.....
(1)

11 Johan wants to make some small cakes.

He finds a recipe that says he needs 360 grams of flour to make 15 small cakes.

Johan has 0.85 kg of flour.

Johan works out how much flour he would need to make 38 small cakes, using the information given in the recipe.

Does Johan have enough flour, according to the recipe, to make 38 small cakes?
Show your working clearly.

(Total for Question 11 is 4 marks)

24 Behnaz makes 300 celebration cards so that

$$\text{number of birthday cards} : \text{number of anniversary cards} : \text{number of congratulations cards} = 7:5:3$$

$\frac{2}{5}$ of the birthday cards have numbers on them.

36% of the anniversary cards have numbers on them.

None of the congratulations cards have numbers on them.

Work out what fraction of the 300 cards have numbers on them.

Give your answer in its simplest form.

(Total for Question 24 is 5 marks)

15 Bella and Millie share some money in the ratio 5:2

Bella receives 10.50 euros more than Millie.

Work out the total amount of money they share.

..... euros

15 Kim spends $\$N$

Of this, she spends

40% on food

$\frac{1}{4}$ on clothes

and the rest on petrol

Kim spends $\$P$ on petrol.

Work out the ratio $P:N$ in the form $a:b$ where a and b are integers.
Give your answer in its simplest form.

(Total for Question 15 is 4 marks)

20 In a box, there are only green sweets, orange sweets and yellow sweets.

There are 280 sweets in the box so that

the number of green sweets : the number of orange sweets = 2 : 3

and

the number of orange sweets : the number of yellow sweets = 1 : 5

Work out how many green sweets there are in the box.

.....

(Total for Question 20 is 3 marks)

- 12 Last season, Alisha and Jaya scored goals for their team in the ratio 4:7
Jaya scored 39 more goals than Alisha.

Work out the number of goals Alisha scored.

(Total for Question 12 is 3 marks)

- 20 C grams of chocolate is shared in the ratios 2 : 5 : 8
The difference between the largest share and the smallest share is 390 grams.

Work out the value of C

$C = \dots\dots\dots$

(Total for Question 20 is 3 marks)

7 In a field, there are 60 sheep and 24 cows.

- (a) Find the ratio of the number of sheep to the number of cows.
Give your ratio in its simplest form.

.....
(2)

In a barn, there are only white ducks and brown ducks.

In the barn, the ratio

number of white ducks : number of brown ducks = 3 : 7

- (b) What fraction of the ducks in the barn are white?

.....
(1)

Giles and Sarah share some bales of hay in the ratio 11 : 4

Sarah receives 20 bales of hay.

- (c) Work out how many bales of hay are shared in total.

.....
(3)

6

Bernard makes currant buns.

For every 400 g of flour he uses, he uses 125 g of currants.

Bernard uses 2000 g of flour.

(b) Work out the weight of currants he uses.

..... g
(2)

16 Last season, the number of goals scored by Arjun, by Simon and by Kath for their football team were in the ratios $2 : 5 : 8$

Simon scored 12 more goals than Arjun.

Work out the number of goals scored by Kath.

(Total for Question 16 is 3 marks)

- 21 Nancy has some coins with a total value of 85 pence.
She has only 2 pence coins and 5 pence coins.
The ratio

$$\text{number of 2 pence coins} : \text{number of 5 pence coins} = 1 : 3$$

Nancy has more 5 pence coins than 2 pence coins.

How many more?

(Total for Question 21 is 4 marks)

- 14 One month, Abbad raised money for charity by being sponsored to run and to walk. His target was to raise 700 dirhams.

During the month, Abbad recorded a total distance of 135 km by running and by walking. The ratio

$$\text{number of km he ran} : \text{number of km he walked} = 2 : 7$$

Abbad received 8 dirhams for each km he ran and 5 dirhams for each km he walked.

Abbad raised more money than his 700 dirhams target.

How much more?

..... dirhams

(Total for Question 14 is 4 marks)

11 A rental company has 360 cars and some vans.

The ratio of the number of cars to the number of vans is 3 : 5

$\frac{4}{9}$ of the cars are electric.

36% of the vans are electric.

The company has more electric vans than electric cars.

Work out how many more.
Show your working clearly.

(Total for Question 11 is 5 marks)

15 Yuan sells fudge in small bags and in large bags.

<p>Small bag Weight 150 g Cost £1.80</p>

<p>Large bag Weight 400 g Cost £5</p>
--

Work out which bag is the better value for money.
Show your working clearly.

(Total for Question 15 is 3 marks)

21 Avril bakes a cake.

She uses flour, butter and sugar such that

$$\begin{aligned}\text{weight of flour} : \text{weight of butter} &= 6 : 5 \\ \text{weight of butter} : \text{weight of sugar} &= 3 : 2\end{aligned}$$

Avril uses 120 grams of sugar.

Work out the weight of flour Avril uses.

..... grams

(Total for Question 21 is 3 marks)