

Ratio Problem Solving

Question Paper

Course	Edexcel IGCSE Maths
Section	1. Numbers & the Number System
Topic	Ratio Problem Solving
Difficulty	Very Hard

Time allowed: 60
Score: /47
Percentage: /100

Question 1

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.

[5 marks]

Question 2

On Saturday, some adults and some children were in a theatre.

The ratio of the number of adults to the number of children was 5 : 2

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.

117 children had seats in the Circle.

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?

You must show how you get your answer.

[5 marks]

Question 3

White shapes and black shapes are used in a game.

Some of the shapes are circles.

All the other shapes are squares.

The ratio of the number of white shapes to the number of black shapes is 3 : 7

The ratio of the number of white circles to the number of white squares is 4 : 5

The ratio of the number of black circles to the number of black squares is 2 : 5

Work out what fraction of all the shapes are circles.

[4 marks]

Question 4

The points A , B , C and D lie in order on a straight line.

$$AB:BD = 1:5$$

$$AC:CD = 7:11$$

Work out $AB:BC:CD$

[3 marks]

Question 5a

There are some small cubes and some large cubes in a bag.

The cubes are red or the cubes are yellow.

The ratio of the number of small cubes to the number of large cubes is 4:7

The ratio of the number of red cubes to the number of yellow cubes is 3:5

Explain why the least possible number of cubes in the bag is 88

[1 mark]

Question 5b

All the small cubes are yellow.

Work out the least possible number of large yellow cubes in the bag.

[3 marks]

Question 6

b is two thirds of c .

$$5a = 4c$$

Work out the ratio $a : b : c$

Give your answer in its simplest form where a , b and c are integers.

[3 marks]

Question 7

$$a : b = 9 : 4 \text{ and } 10b = 7c$$

Work out $a : c$ in its simplest form.

[3 marks]

Question 8

Arjun and Gretal each pay rent.

In 2018, the ratio of the amount each paid in rent was Arjun : Gretal = 5 : 7.
In 2019, the ratio of the amount each paid in rent was Arjun : Gretal = 9 : 13.

Arjun paid the same amount of rent in both 2018 and 2019.
Gretal paid \$290 more rent in 2019 than she did in 2018.

Work out the amount Arjun paid in rent in 2019.

\$

[4 marks]

Question 9

Some visitors to a campsite are in the ratio

$$\text{men} : \text{women} = 5 : 4 \text{ and } \text{women} : \text{children} = 3 : 7.$$

i)

Calculate the ratio **men : women : children** in its simplest form.

..... [2]

ii)

There are 224 children at the campsite.

Calculate the total number of men and women.

[3]

[5 marks]

Question 10

The fares for a train journey are shown in the table below.

From London to Marseille	Standard fare	Premier fare
Adult	\$84	\$140
Child	\$60	\$96

For one journey from London to Marseille, the ratio

$$\text{number of adults} : \text{number of children} = 11 : 2.$$

There were 220 adults in total on this journey.

All of the children and 70% of the adults paid the standard fare.

The remaining adults paid the premier fare.

Calculate the total of the fares paid by the adults and the children.

\$

[5 marks]

Question 11

Some people who work for a company are in the following age groups.

Group A	Group B	Group C
Under 30 years	30 to 50 years	Over 50 years

The ratio of the number in group A to the number in group B is 7 : 10.

The ratio of the number in group B to the number in group C is 4 : 3.

i)

Find the ratio of the number in group A to the number in group C.

Give your answer in its simplest form.

..... : [3]

ii)

There are 45 people in group C.

Find the total number of people who work for the company.

[3]

[6 marks]

