

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Number

Finding fractions of amounts with a calculator

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments
- You may use a calculator



Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

Questions 1 to 19 are **foundation** tier only

Q1.

Work out one quarter of 5 hours.
Give your answer in minutes.

(Total 2 marks)

Q2.

The average age of teachers at a school is 36 years.

Mr Smith's age is $\frac{11}{9}$ of the average.
How old is Mr Smith?

(Total 2 marks)

Q3.

In a class, the number of girls as a fraction of the number of boys is $\frac{5}{4}$
(a) Write down the number of boys as a fraction of the number of girls.

(1)

(b) There are 20 girls in the class.
Work out the number of boys.

(2)

(Total 3 marks)

Q4.

Nihal has savings of £168

He uses $\frac{5}{7}$ of his savings to buy sports equipment.

(a) Assume that he will use $\frac{1}{3}$ of the **rest** of the money to buy a shirt.
How much of his savings, in £, will he have left?

(3)

(b) In fact, he uses **more** than $\frac{1}{3}$ of the rest of the money to buy a shirt.
What does this tell you about how much of his savings he has left?
Tick **one** box.

☐
☐
☐
☐

It is more than the answer to part (a)

It is the same as the answer to part (a)

It is less than the answer to part (a)

It is not possible to tell

(1)

(Total 4 marks)

Q5.

A train has 1 first-class carriage and 6 standard carriages.

The first-class carriage has 64 seats.

$\frac{3}{8}$

are being used.

Each standard carriage has 78 seats.

$\frac{7}{13}$

in each carriage are being used.

Are **more than** half the seats on the train being used?

You **must** show your working.

(Total 5 marks)

Q6.

(a) Shade $\frac{2}{5}$ of this grid.

(1)

(b) Shade 10% of this grid.

(1)

(Total 2 marks)

Q7.

Which is longer, $\frac{3}{4}$ of a day or 1000 minutes?

You **must** show your working.

(Total 3 marks)

Q8.

Work out $\frac{3}{5}$ of 900

(Total 2 marks)

Q9.

(a) Work out 11% of 1400

(2)

(b) Work out $\frac{4}{5}$ of 295

(2)

(Total 4 marks)

Q10.

(a) Work out $\frac{2}{7} \times 3$

(1)

(b) Work out $\sqrt{529}$

(1)

(c) Work out 3^4

(1)

(Total 3 marks)

Q11.

Work out which distance is longer,

20% of 320 miles or $\frac{1}{2}$ of 130 miles.

You **must** show your working.

(Total 4 marks)

Q12.

A pack of pegs costs 40p

A bar of soap costs £2.20

A basket costs £7

Dan buys **two** packs of pegs, **one** bar of soap and **one** basket.

What fraction of the total cost is the cost of the basket?

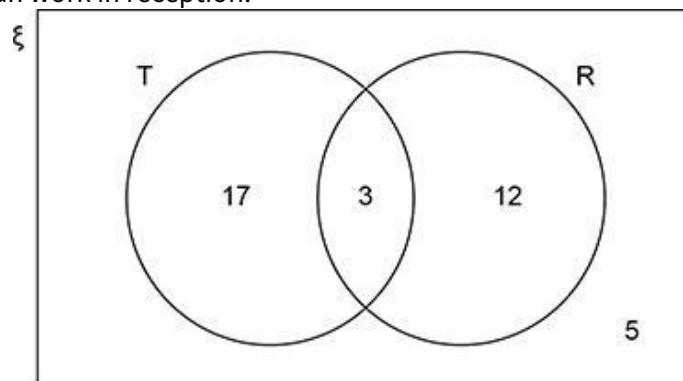
(Total 3 marks)

Q13.

The Venn diagram shows information about people who work in a gym.

T = people who can work as a trainer.

R = people who can work in reception.



(a) How many people can work as a trainer **and** in reception?

(1)

(b) How many people can work in reception but **not** as a trainer?

(1)

(c) What fraction of **all** the people can work as a trainer?

(2)

(Total 4 marks)

Q14.

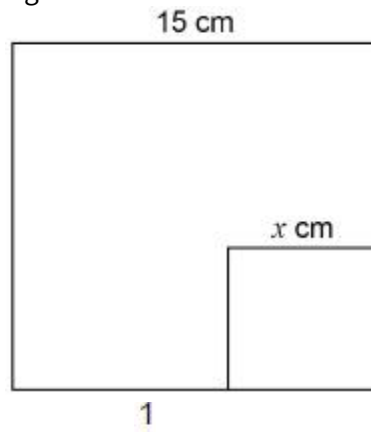
Work out $\frac{1}{4}$ of 780

(Total 1 mark)

Q15.

A small square has length x cm

A large square has length 15 cm



Not drawn
accurately

The area of the small square is $\frac{1}{9}$ of the area of the large square.
Work out the value of x .

(Total 3 marks)

Q16.

A water tank is $\frac{3}{4}$ full.

56 litres of water are taken from the tank.

The tank is now $\frac{2}{5}$ full.

Show clearly that the tank holds 160 litres when full.

(Total 4 marks)

Q17.

- (a) On Saturday a museum had 175 visitors.
28% of them were given a questionnaire.
How many visitors were given the questionnaire?

(2)

- (b) On Sunday the museum had 242 visitors.
 $\frac{2}{11}$ of them were given the questionnaire.
Were **more** people given the questionnaire on Saturday or Sunday?
You **must** show your working.

(3)

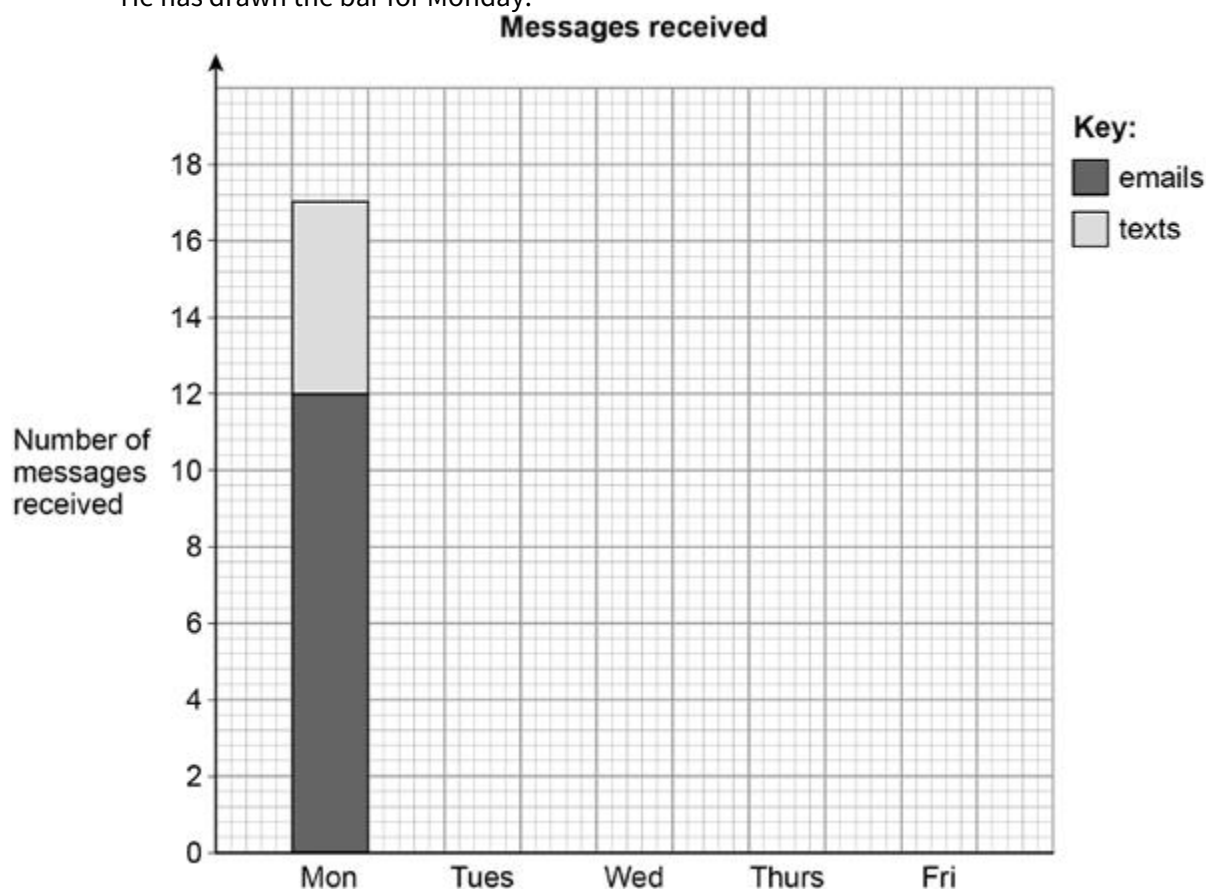
(Total 5 marks)

Q18.

The table shows the number of messages Sam received each day for five days.

	Messages	
	Number of emails	Number of texts
Monday	12	5
Tuesday	8	6
Wednesday	10	3
Thursday	6	6
Friday	12	4

- (a) Sam draws a composite bar chart to represent the data.
He has drawn the bar for Monday.



Complete the chart.

- (b) In total, what fraction of the messages were emails?
Give your answer in its simplest form.

(2)

(3)

(Total 5 marks)

Q19.

John buys a phone.

He looks at the cost of 60 applications (apps).

Cost of application	Number of applications
free (0p)	30
59p	16
99p	5
£1.29	2
£1.49	1
£1.99	6

- (a) John buys all the applications costing £1.99
How much does he pay? (2)
- (b) What fraction of the 60 applications are free?
Give your answer in its simplest form. (2)
- (c) What percentage of the 60 applications cost £1.99?
Circle the correct answer. (1)
- 6% 10% 16% 60%
- (d) John wants to know the make of phone used by people in his class.
Write down a suitable data collection method. (1)
- (Total 6 marks)**

Questions 20 to 22 are **higher** tier only

Q20.

Which is greater?

$\frac{5}{8}$ of 900

or 320 increased by 68%

You **must** show your working.

(Total 5 marks)

Q21.

In a crowd, the ratio home supporters : away supporters is $x : y$

Write down the fraction of the crowd that are home supporters.

(Total 1 mark)

Q22.

A is half of B.

Work out the ratio A : B

Circle your answer.

1 : 2

2 : 1

1 : 3

3 : 1

(Total 1 mark)