

Teach Me Maths

Please write clearly in block capitals.

Name _____

Date _____

GCSE MATHEMATICS

F

Foundation Tier • Paper 2 (Calculator)

Mock Set B

For AQA GCSE Mathematics (8300)

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments
- the Formulae Sheet (the last page of this paper).

Instructions

- Write in black ink or black ball-point pen. Use a pencil for diagrams.
- Write your name and the date at the top of this page.
- Answer **all** questions.
- Write your answers in the spaces provided. If you need more room, use extra paper and write the question number next to your answer.
- Do all your rough work on this paper. Cross out any work you do not want to be marked.

Information

- The marks for each question are shown in brackets.
- The maximum mark for this paper is 80.
- You may use extra answer paper, graph paper and tracing paper.

Advice

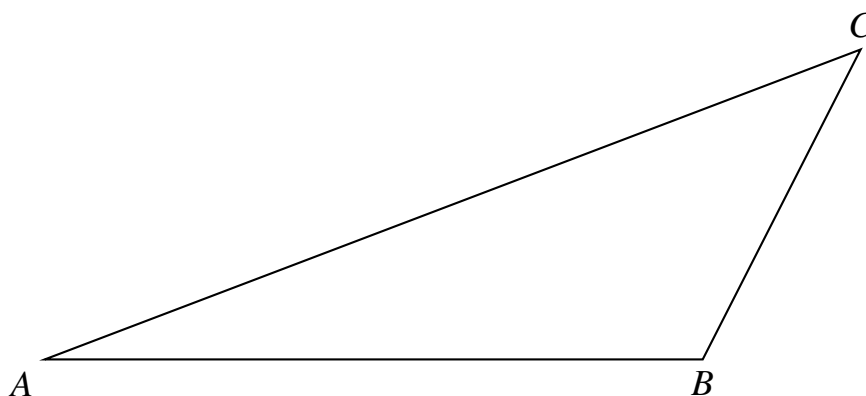
In every calculation, show clearly how you get your answer.

For the marker
TOTAL (out of 80)

Practice paper written by Teach Me Maths in the style of AQA GCSE Mathematics (8300). Not an official AQA paper.

Answer **all** questions in the spaces provided.

- 1 Here is an accurate drawing of triangle ABC .



- (a) Measure the length of AB .
Give your answer in millimetres.

[1 mark]

Answer _____ mm

- (b) Measure the size of angle ABC .

[1 mark]

Answer _____ degrees

- 2** (a) Write 0.07 as a percentage.

[1 mark]

Answer _____ %

- (b) Write $\frac{5}{8}$ as a decimal.

[1 mark]

Answer _____

- (c) Write 28% as a fraction in its simplest form.

[1 mark]

Answer _____

- 3** (a) Simplify $w + w + w + w + w$

[1 mark]

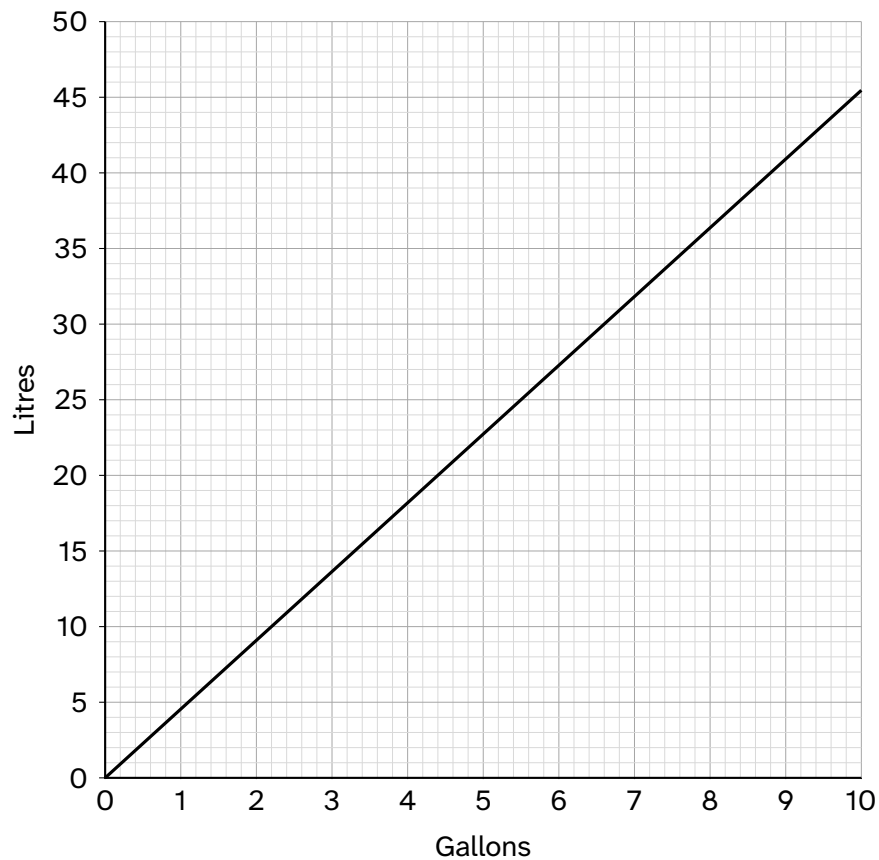
Answer _____

- (b) Simplify $8k - 3 + 2k + 9$

[1 mark]

Answer _____

- 4 A petrol station uses this graph to convert between gallons and litres.



- (a) Use the graph to convert 25 litres to gallons.

[1 mark]

Answer _____ gallons

- (b) Finlay's van has a fuel tank that holds 16 gallons.

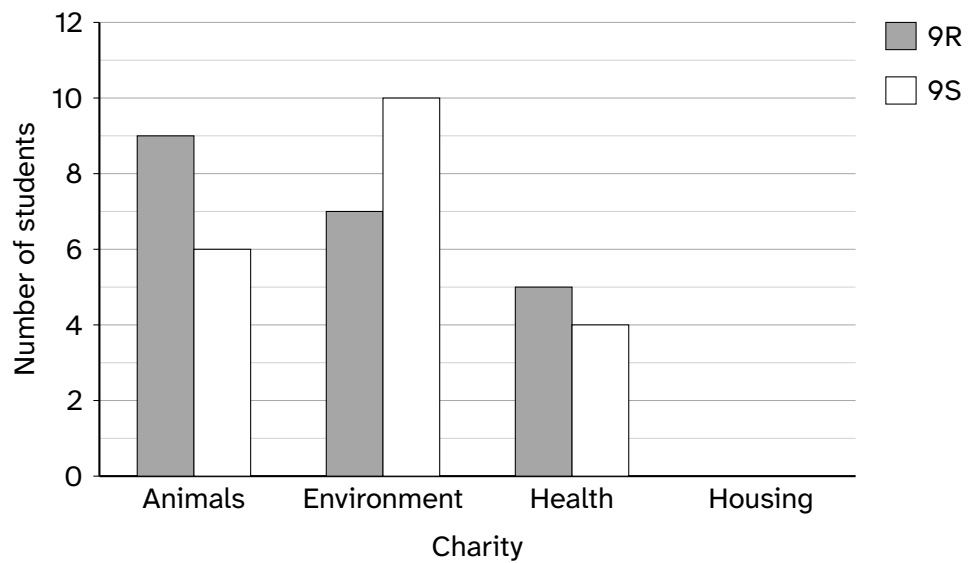
How many litres does the tank hold?

[2 marks]

Answer _____ litres

- 5 Each student in two tutor groups, 9R and 9S, voted for one charity.

The bar chart shows some of the results.



- (a) How many more students in 9S than in 9R voted for Environment?

[1 mark]

Answer _____

- (b) 15 students in the two tutor groups voted for Housing.

Twice as many students in 9R as in 9S voted for Housing.

Complete the bar chart.

[3 marks]

6 Joe wants to work out

$$\frac{15 + 9}{3 \times 2}$$

He types this into his calculator.

$$15 + 9 \div 3 \times 2$$

His calculator shows the answer 21

Joe says,

“The answer is 21”

Is Joe correct?

Tick a box.

☐

Yes

☐

No

Show working to support your answer.

[2 marks]

- 7** Naomi and four friends have a meal at a restaurant.

The food and drinks cost £64.80

A service charge of 12.5% is added to the bill.

The five people share the total bill equally.

How much does each person pay?

[3 marks]

Answer £ _____

- 8** Seren's padlock has a three-digit code.

The code uses the digits 2, 7 and 9

Each digit is used once.

- (a) List all the possible codes.

[2 marks]

Answer _____

- (b) Seren remembers that her code is greater than 750

How many of the possible codes are greater than 750?

[1 mark]

Answer _____

- 9 The table shows the number of goals a hockey team scored in each match last season.

Number of goals	0	1	2	3	4
Number of matches	4	7	5	3	2

- (a) Work out the mean number of goals per match.

Give your answer to 1 decimal place.

[2 marks]

Answer _____

- (b) Hannah says,

“The median number of goals is 2, because 2 is the middle number of goals in the table.”

Is Hannah correct?

Tick a box.

☐ Yes ☐ No

Show working to support your answer.

[2 marks]

10 Karim works at a café.

He is paid £11.60 per hour for the first 7 hours he works each day.

For any time over 7 hours in a day, he is paid 1.5 times his normal hourly rate.

The table shows the hours Karim works one weekend.

Day	Friday	Saturday	Sunday
Hours worked	5	$9\frac{1}{2}$	8

Work out the total amount Karim is paid for these three days.

[4 marks]

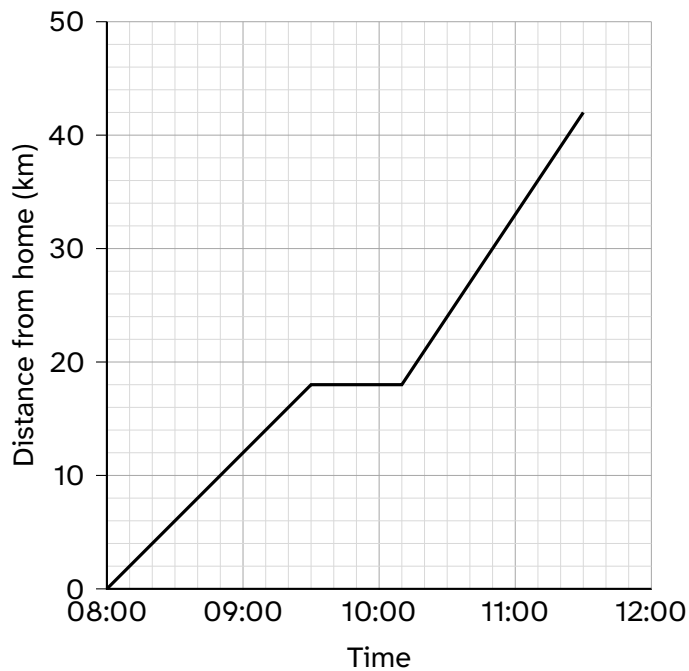
Answer £ _____

11 Work out the value of $2p^2 - 5q$ when $p = -3$ and $q = -4$

[2 marks]

Answer _____

- 12** Olivia cycles from her home to a reservoir.
She stops for a rest on the way.
The distance-time graph shows her journey.



- (a) How many minutes did Olivia stop for?

[1 mark]

Answer _____ minutes

- (b) Work out Olivia's average speed after her stop.
Give your answer in km/h.

[2 marks]

Answer _____ km/h

- (c) Was Olivia cycling faster before her stop or after her stop?
Tick a box.

☐

Before her stop

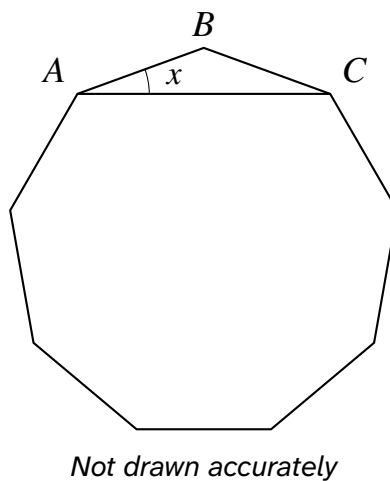
☐

After her stop

Give a reason for your answer.

[1 mark]

- 13** A logo is in the shape of a regular nine-sided polygon.
 A , B and C are three vertices of the polygon.
A straight line joins A to C .



Work out the size of angle x .

[3 marks]

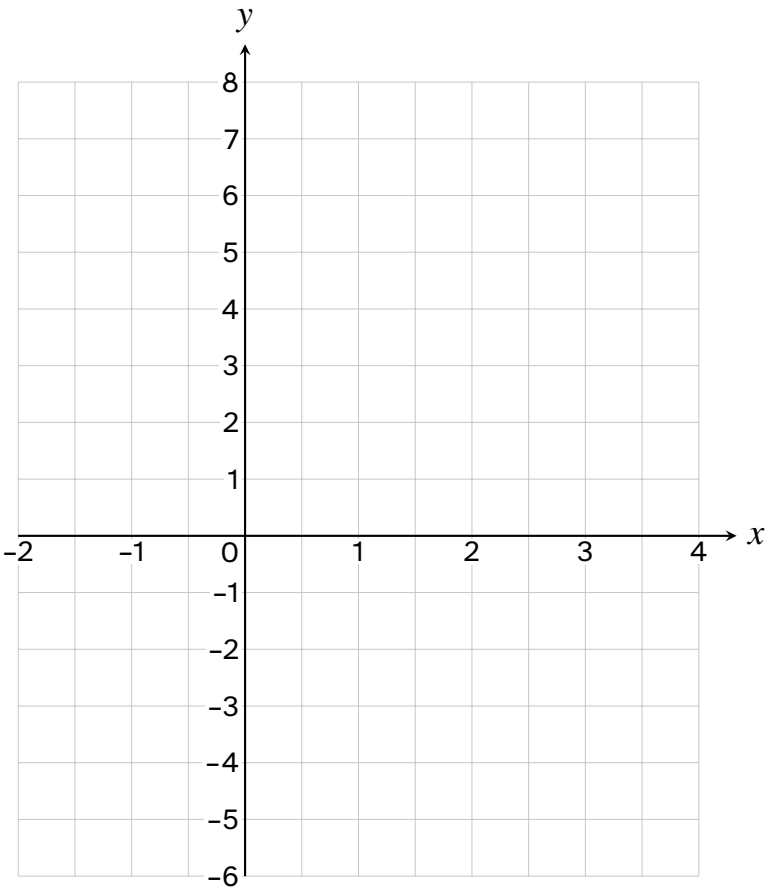
$x =$ _____ $^{\circ}$

14 (a) Complete the table of values for $y = x^2 - x - 5$

x	-2	-1	0	1	2	3	4
y	1		-5	-5	-3	1	

[2 marks]

(b) On the grid, draw the graph of $y = x^2 - x - 5$ for values of x from -2 to 4



[2 marks]

- 15** Abdul uses his calculator to work out

$$\frac{487 \times 3.9}{21}$$

His answer is 9.044

Use approximations to show that Abdul's answer must be wrong.

[2 marks]

- 16** Mahnoor runs an 8 km cross-country race.

Her time is 41 minutes 15 seconds.

Work out her average speed in km/h.

Give your answer to 1 decimal place.

[3 marks]

Answer _____ km/h

- 17** A sack of rice has a mass of 2.5×10^4 grams.
The mass of one grain of rice is 2.8×10^{-2} grams.

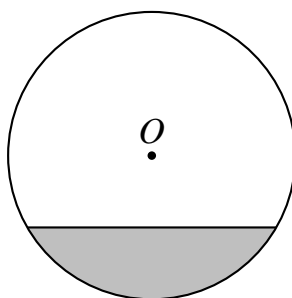
Work out the number of grains of rice in the sack.

Give your answer in standard form to 3 significant figures.

[2 marks]

Answer _____

- 18** The diagram shows a circle, centre O .



What is the name of the shaded region?

Circle your answer.

[1 mark]

sector

segment

chord

arc

19 The price of a flight increased by 8%

The new price is £151.20

Work out the price before the increase.

[3 marks]

Answer £ _____

20 The table shows information about the delivery times for two food delivery services.

	Mean time (minutes)	Shortest time (minutes)	Range (minutes)
Service A	34	28	12
Service B	27	15	31

(a) Compare the delivery times for the two services.

[2 marks]

(b) Aisha's food must be delivered within 45 minutes.

Which service should she use?

Tick a box.

☐

Service A

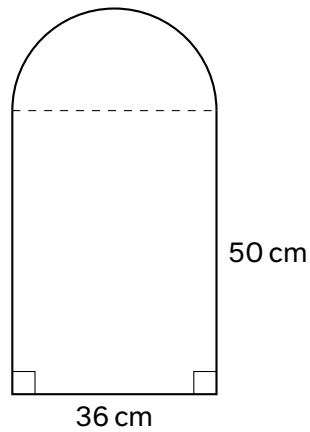
☐

Service B

Give a reason for your answer.

[1 mark]

- 21** A mirror is made from a rectangle and a semicircle.



Not drawn accurately

- (a) Work out the area of the mirror.
Give your answer to 1 decimal place.

[2 marks]

Answer _____ cm^2

- (b) A strip of wood is fixed around the edge of the mirror.
Work out the length of the strip of wood.
Give your answer to 1 decimal place.

[2 marks]

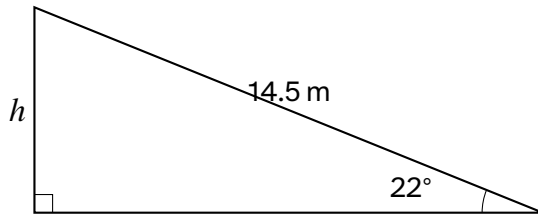
Answer _____ cm

22 A conveyor belt carries gravel up from the ground.

The belt is straight and 14.5 m long.

It slopes up at 22° to the horizontal.

h is the vertical height of the top end of the belt.



Not drawn accurately

Work out the height, h .

Give your answer to 1 decimal place.

[3 marks]

$h =$ _____ m

23 A streaming service had 28 640 members at the start of 2025.

During 2025

6 125 members left

9 870 new members joined.

Work out the percentage increase in the number of members during 2025.

Give your answer to 1 decimal place.

[3 marks]

Answer _____ %

24 Rearrange $T = 6a + 5c$ to make c the subject.

[2 marks]

$c =$ _____

- 25** In a board game, a player rolls two fair six-sided dice.
The score is the difference between the two numbers.
For example, a 5 and a 2 give a score of 3

(a) Work out the probability that the score is 2

[2 marks]

Answer _____

(b) Lydia says,

“A score of 0 is the most likely score.”

Is Lydia correct?

Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

[1 mark]

26 An animal rescue centre has only cats, dogs and rabbits.

number of cats : number of dogs = 5:2

number of dogs : number of rabbits = 4:3

There are 18 rabbits.

How many more cats than rabbits are there?

[4 marks]

Answer _____

27 At a builders' merchant

all bags of sand are the same price

all bags of cement are the same price.

Kofi pays £28.30 for 3 bags of sand and 2 bags of cement.

Vic pays £19.10 for 1 bag of sand and 2 bags of cement.

Rafael has £30

He wants to buy 2 bags of sand and 3 bags of cement.

Does Rafael have enough money?

Tick a box.

☐

Yes

☐

No

Show working to support your answer.

[4 marks]

END OF QUESTIONS

Formulae Sheet

For AQA GCSE Mathematics (8300) • Foundation Tier

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

$$\text{Area of a trapezium} = \frac{1}{2}(a + b)h$$

Volume of a prism = area of cross section $\times$ length

Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Pythagoras' Theorem and Trigonometry

In any right-angled triangle where a , b and c are the lengths of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a , b and c are the lengths of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is the number of times that the interest is compounded:

$$\text{Total accrued} = P \left(1 + \frac{r}{100} \right)^n$$

Probability

Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$