

Teach Me Maths

Please write clearly in block capitals.

Name _____

Date _____

GCSE MATHEMATICS

F

Foundation Tier • Paper 2 (Calculator)

Mock Set A

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** The table shows the temperature at midday in five cities on one day in January.

City	Oslo	Warsaw	Dublin	Vienna	Lisbon
Temperature ($^{\circ}\text{C}$)	-7	-3	5	-1	12

- (a) Which city was the coldest?

[1 mark]

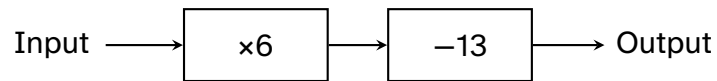
Answer _____

- (b) Work out the difference between the highest temperature and the lowest temperature.

[1 mark]

Answer _____ $^{\circ}\text{C}$

2 Here is a number machine.



(a) Work out the output when the input is 7

[1 mark]

Answer _____

(b) Work out the input when the output is 59

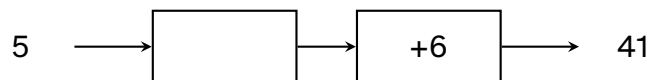
[1 mark]

Answer _____

(c) Here is a different number machine.

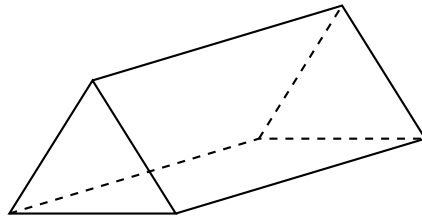
When the input is 5, the output is 41

Write the missing operation in the empty box.

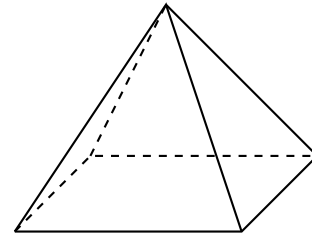


[1 mark]

3 Here are two solids.



Solid A



Solid B

(a) How many edges does solid A have?

[1 mark]

Answer _____

(b) How many vertices does solid B have?

[1 mark]

Answer _____

(c) Rhys says,

“Solid A and solid B have the same number of faces.”

Is Rhys correct?

Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

[1 mark]

4 (a) Work out $\sqrt{14.8} + \frac{9.1}{3.2 + 1.75}$

Write down all the figures on your calculator display.

[1 mark]

Answer _____

(b) Write your answer to part (a) correct to 1 decimal place.

[1 mark]

Answer _____

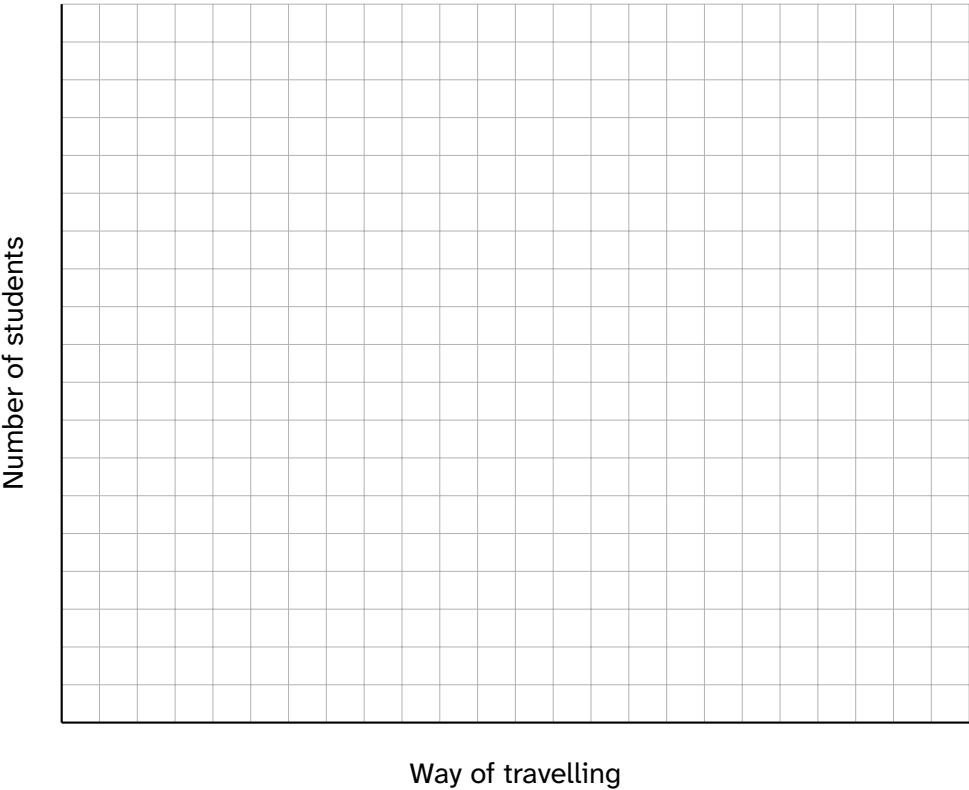
- 5** Some students were asked how they travel to a weekend sports club.
The tally chart shows the results.

Way of travelling	Tally	Frequency
Walk		
Bicycle		
Car		
Bus		
Train		

(a) Complete the frequency column.

[1 mark]

(b) On the grid, draw a bar chart to show the information in the table.



[3 marks]

6 Write these numbers in order of size.

Start with the smallest number.

32% 0.33 $\frac{13}{40}$ 0.3

[2 marks]

Answer _____

7 Decorative pebbles for gardens are sold in two sizes of bag.

Small bag	Large bag
9 kg	25 kg
£5.49	£15.75

Which bag is better value for money?

Tick a box.

☐ Small bag ☐ Large bag

You must show your working.

[3 marks]

- 8** A farm packs eggs into boxes.
Each box holds 6 eggs.
Only full boxes are sent to shops.

The full boxes are packed into crates.
Each crate holds 24 boxes.

One week the farm has 2000 eggs.

Work out

- the number of crates needed for all the full boxes
- the number of empty spaces for boxes in the last crate.

[4 marks]

Number of crates _____

Number of empty spaces _____

9 An electrician charges

a fixed charge of £45 for each job

£38 for each hour the job takes.

- (a) Write a formula for the total cost, £ C , for a job that takes h hours.

[2 marks]

Answer _____

- (b) Use your formula to work out the cost of a job that takes $3\frac{1}{2}$ hours.

[1 mark]

Answer £ _____

10 There are 840 students at a sixth-form college.

273 of these students walk to the college.

What percentage of the students walk to the college?

[2 marks]

Answer _____ %

11 In a warehouse, two robots load parcels onto a lorry.

Robot A loads a parcel every 40 seconds.

Robot B loads a parcel every 1 minute 15 seconds.

Both robots load a parcel at exactly 2 pm.

At what time will both robots next load a parcel at the same time?

[3 marks]

Answer _____

12 A games club tests a six-sided dice.

The dice is rolled 250 times.

The table shows the results.

Score	1	2	3	4	5	6
Frequency	30	37	28	34	36	85

(a) Mia is going to roll the dice 600 times.

Use the results in the table to estimate how many times she will roll a 6

[2 marks]

Answer _____

(b) Jake says,

“The dice is fair.”

Do the results suggest that Jake is correct?

Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

[1 mark]

- 13 Hamza wants to buy a cordless drill.

Shop	Online
Normal price £85 Sale: 15% off	£61.50 plus VAT at 20%

Hamza says,

“The drill is cheaper online.”

Is Hamza correct?

Tick a box.

☐

Yes

☐

No

Show working to support your answer.

[4 marks]

- 14 The length of a lizard is 23.6 cm, correct to 1 decimal place.

Complete the error interval for the length of the lizard.

[2 marks]

_____ cm $\leq$ length $<$ _____ cm

15 Here are the first five terms of a linear sequence.

4 11 18 25 32

(a) Work out an expression for the n th term of the sequence.

[2 marks]

Answer _____

(b) Is 375 a term in this sequence?

Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

[1 mark]

- 16** The wheel of a unicycle has a diameter of 61 cm.

Tomasz rides the unicycle in a straight line for 1.5 km.

How many complete turns does the wheel make?

[3 marks]

Answer _____

- 17** Rearrange $w = 3v - 11$ to make v the subject.

[2 marks]

$v =$ _____

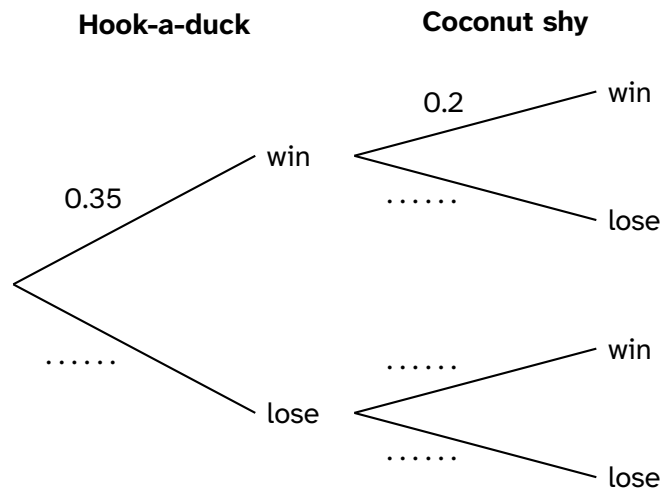
- 18** Ellie plays two games at a fair, hook-a-duck and a coconut shy.

The probability that she wins at hook-a-duck is 0.35

The probability that she wins at the coconut shy is 0.2

The two games are independent.

- (a) Complete the tree diagram.



[2 marks]

- (b) Work out the probability that Ellie wins at least one of the two games.

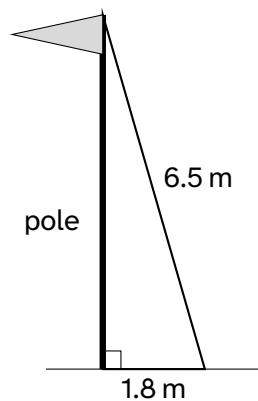
[2 marks]

Answer _____

19 A vertical pole stands on horizontal ground.

A straight wire joins the top of the pole to the ground, 1.8 m from the bottom of the pole.

The wire is 6.5 m long.



Not drawn accurately

Use Pythagoras' theorem to show that the height of the pole is 6.2 m, correct to 1 decimal place.

[3 marks]

- 20** In 2025, a museum had 30 450 visitors.
This was 16% fewer visitors than in 2024.

Priya says,

“The museum had 35 322 visitors in 2024.”

Is Priya correct?

Tick a box.

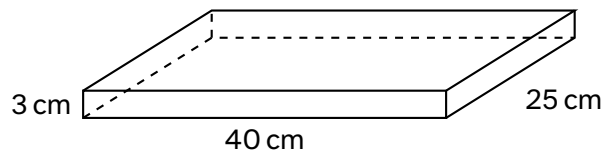
☐ Yes

☐ No

Show working to support your answer.

[3 marks]

- 21 A chopping board is a solid cuboid made of wood.



Not drawn accurately

The mass of the chopping board is 2.04 kg.

The table shows the densities of some types of wood.

Wood	Walnut	Ash	Beech	Oak
Density (g/cm ³)	0.64	0.68	0.72	0.75

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

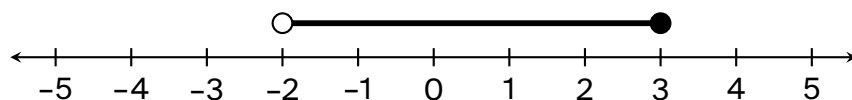
Which type of wood is the chopping board made of?

You must show your working.

[3 marks]

Answer _____

- 22 (a) Which inequality is shown on the number line?



Circle your answer.

[1 mark]

$$-2 < x \leq 3$$

$$-2 \leq x < 3$$

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$$-2 \leq x \leq 3$$

- (b) n is an integer.

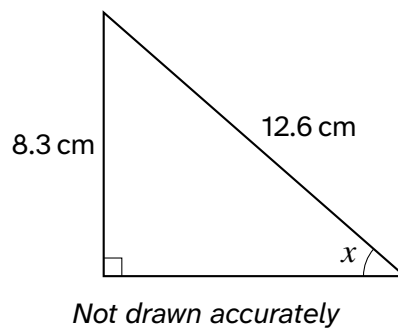
$$-4 \leq n < 2$$

Write down all the possible values of n .

[2 marks]

Answer _____

23 Here is a right-angled triangle.



Work out the size of angle x .

Give your answer to 1 decimal place.

[3 marks]

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

24 Zainab is saving for her first car.

She needs £3500

She puts £3200 into a savings account.

She does not add or take out any money.

The account pays compound interest at

2.5% per year for the first 2 years

2% per year after that.

Will Zainab have enough money for the car after 4 years?

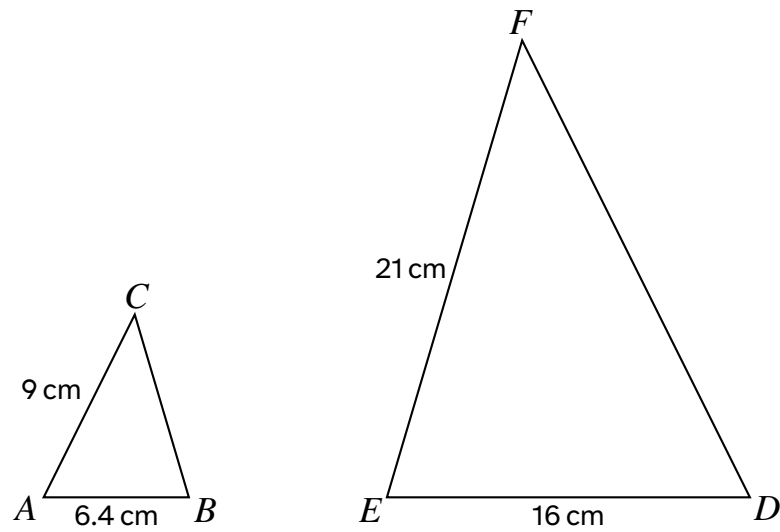
You must show your working.

[4 marks]

Answer _____

25 Triangle ABC and triangle DEF are mathematically similar.

A corresponds to D , B corresponds to E and C corresponds to F .



Not drawn accurately

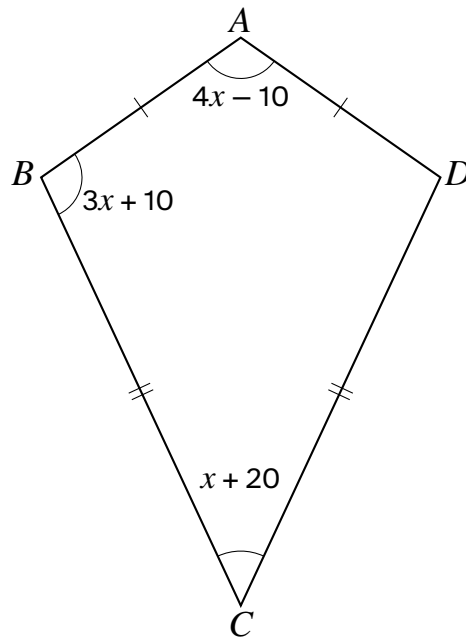
Work out the perimeter of triangle ABC .

[4 marks]

Answer _____ cm

26 $ABCD$ is a kite.

The angles are given in degrees.



Not drawn accurately

Work out the size of the largest angle of the kite.

[5 marks]

Answer _____ degrees

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 :

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