



General Certificate of Secondary Education
November 2023

Centre Number

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Candidate Number

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Mathematics

Unit M6 Paper 1
(Non-Calculator)

Foundation Tier

[GMC61]



GMC61

THURSDAY 23 NOVEMBER, 9.15 am – 10.15 am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page, on blank pages or tracing paper.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all seventeen** questions.

All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

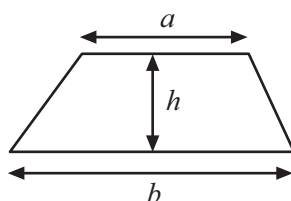
You should have a ruler, compasses and a protractor.

The Formula Sheet is on page 2.

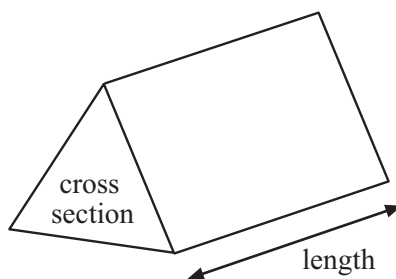


Formula Sheet

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



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



1 Here are some metric and imperial units.

miles pints kilograms millimetres

Write them in the correct place in the table below.

Metric units	Imperial units

[2]

2 A farmer supplies cucumbers to a supermarket.

The farmer grew 7882 cucumbers last year.

The supermarket bought 59% of these cucumbers.

(a) **Estimate** the number of cucumbers the supermarket bought.

Show your working.

Answer _____ [2]

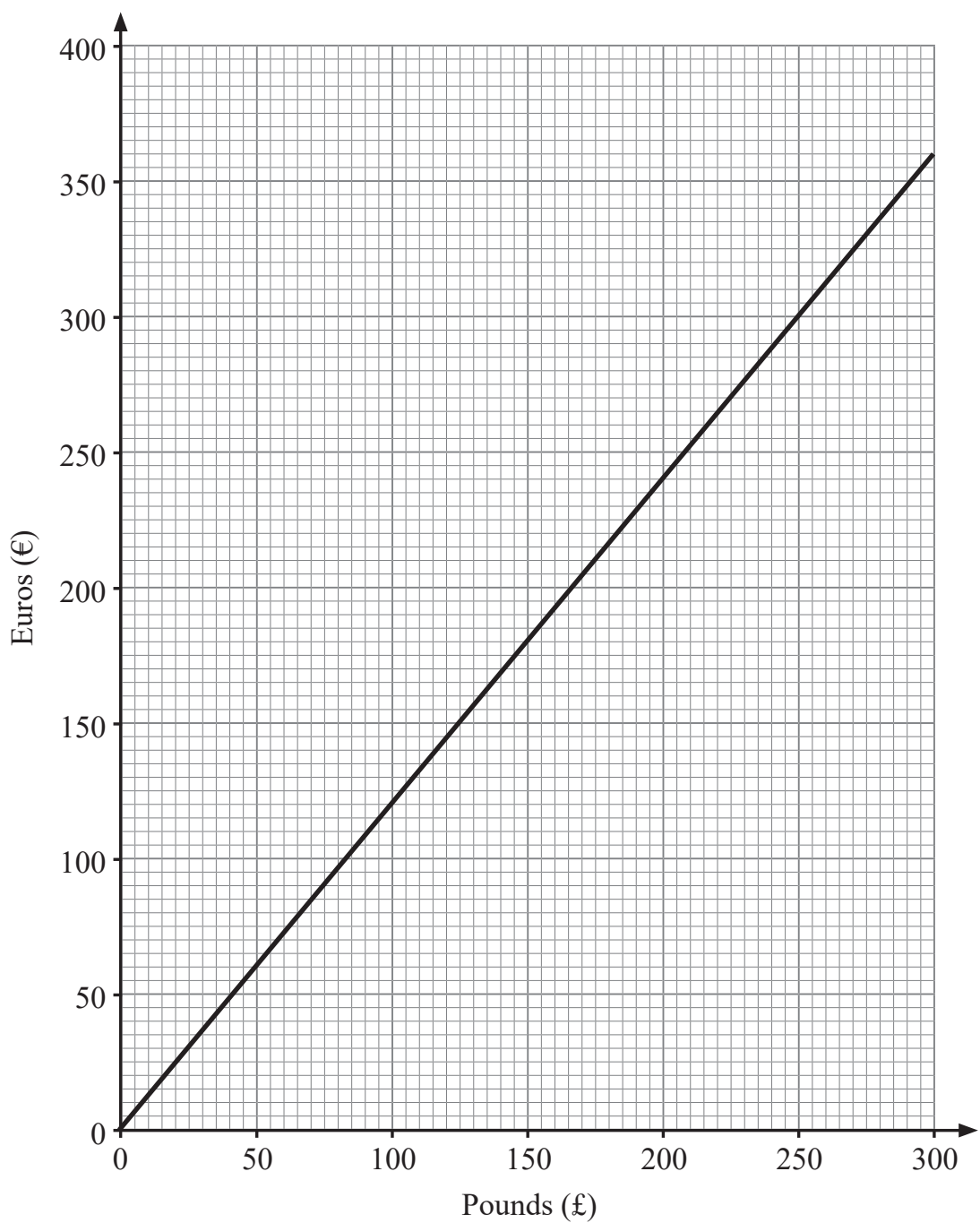
(b) Explain why your answer to (a) is an overestimate.

Answer _____
_____ [1]

[Turn over



3 This is a conversion graph to change between pounds (£) and euros (€).



14119



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(a) Orla changes 250 euros (€) into pounds (£).

How many pounds (£) does she get?

Answer £ _____ [1]

(b) Callum has £160 and €200

Quinn Electronics lets him spend both pounds and euros.

Can Callum afford to buy a laptop costing €385?

Show your working.

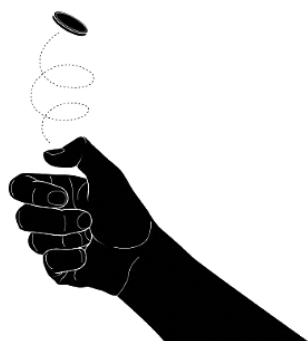
Answer _____ because _____ [2]

[Turn over

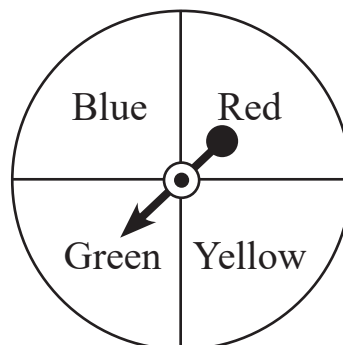


4 Bill flips a fair coin with outcomes head and tail once.

He spins the spinner with outcomes blue, red, yellow and green once.



© Getty Images



(a) List all the possible outcomes that Bill can get.

[2]

(b) The probability of getting an outcome of a tail and yellow is $\frac{1}{8}$

Explain **clearly** why this is the case.

[1]



5 The length of the side of a square is 51.1 cm.

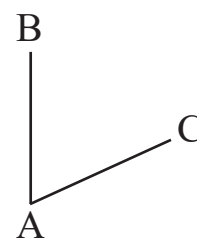
Estimate the area of the square.

Answer _____ cm² [2]



6 Cara read the following instructions to draw a triangle.

- Using a ruler, draw a 10 cm **vertical line** from point A.
Note: Point A has been marked below.
- Label the other end B.
- Place a protractor at point A and measure an angle of 70° to the right of the line AB and mark with a dot.
- Draw an 8 cm line from A through your dot.
- Label the end of this line C.
- Join B to C.



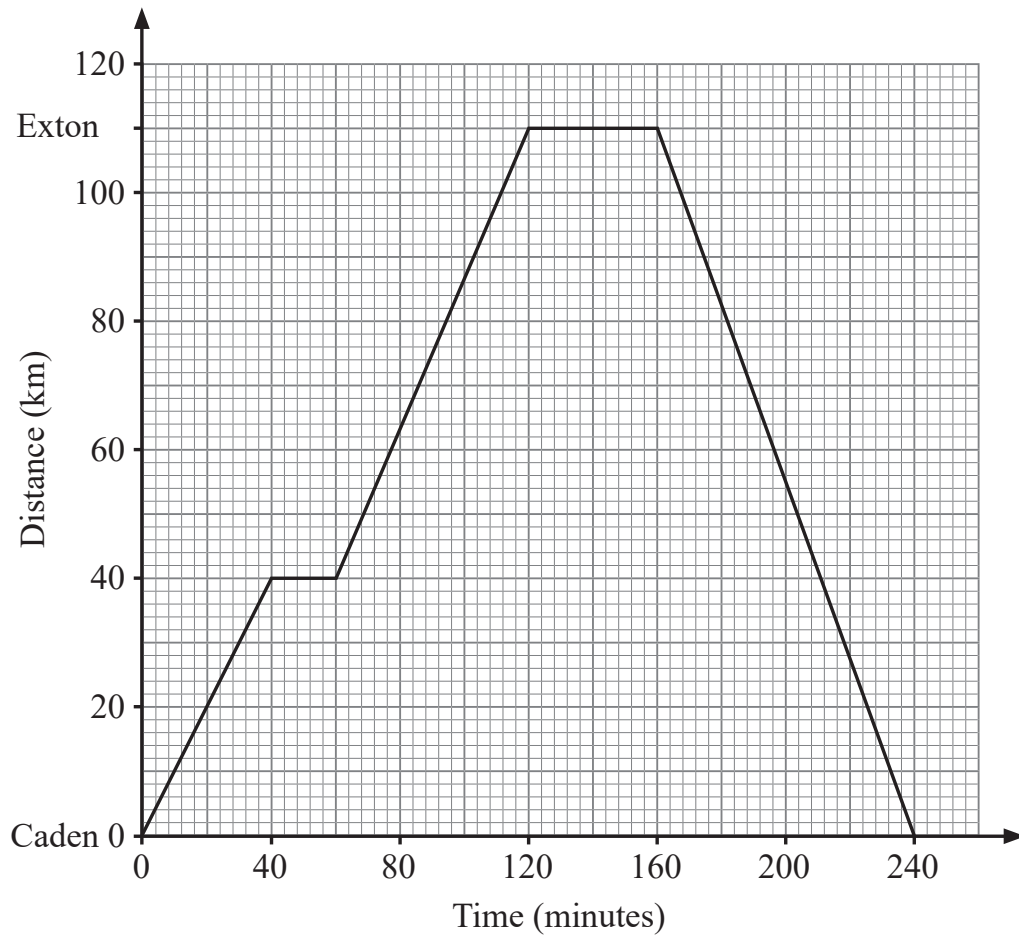
Follow the instructions and draw Cara's triangle below.

•
A

[3]



7 The graph shows Paul's journey from Caden to Exton and back to Caden.



(a) How far is Paul from Caden when he first stops?

Answer _____ km [1]

(b) How long did Paul stay at Exton?

Answer _____ minutes [1]

(c) Paul left Caden at 8.30 am.

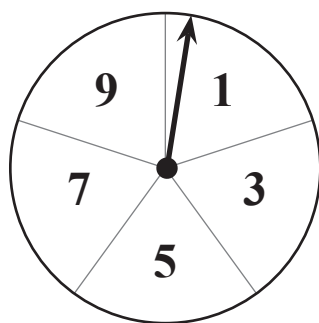
At what time did he leave Exton?

Answer _____ am [2]

[Turn over



8 A fair spinner has outcomes of 1, 3, 5, 7 and 9



The spinner is spun twice.

The two outcomes are **added** together to give a score.

(a) Complete the table below to show all possible scores.

		First spin				
		1	3	5	7	9
Second spin	1	2				
	3		6			
	5			10		
	7	8			14	
	9			14		18

[2]

(b) What is the probability of getting the “most likely” score?

Answer _____ [1]



9 A bag contains 140 g of crisps.

30% is fat.

How many grams is this?

Answer _____ g [2]



10 Kevin owns a business.

$\frac{3}{5}$ of his customers pay by card.

$\frac{2}{7}$ pay in cash.

The rest pay by cheque.

What fraction pay by cheque?

Answer _____ [3]





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Look at the table below.

It shows the number of pastries sold in the morning.

Cinnamon rolls	1
Apple pies	6
Chocolate muffins	8
Carrot cake	5

Based on this data, how many of the 50 pastries sold in the afternoon would you expect to be chocolate muffins?

Answer _____ [3]

[Turn over



12 Given that $\frac{29400}{245} = 120$, write down the answer to

(a) $\frac{2940}{245}$

Answer _____ [1]

(b) 245×240

Answer _____ [1]

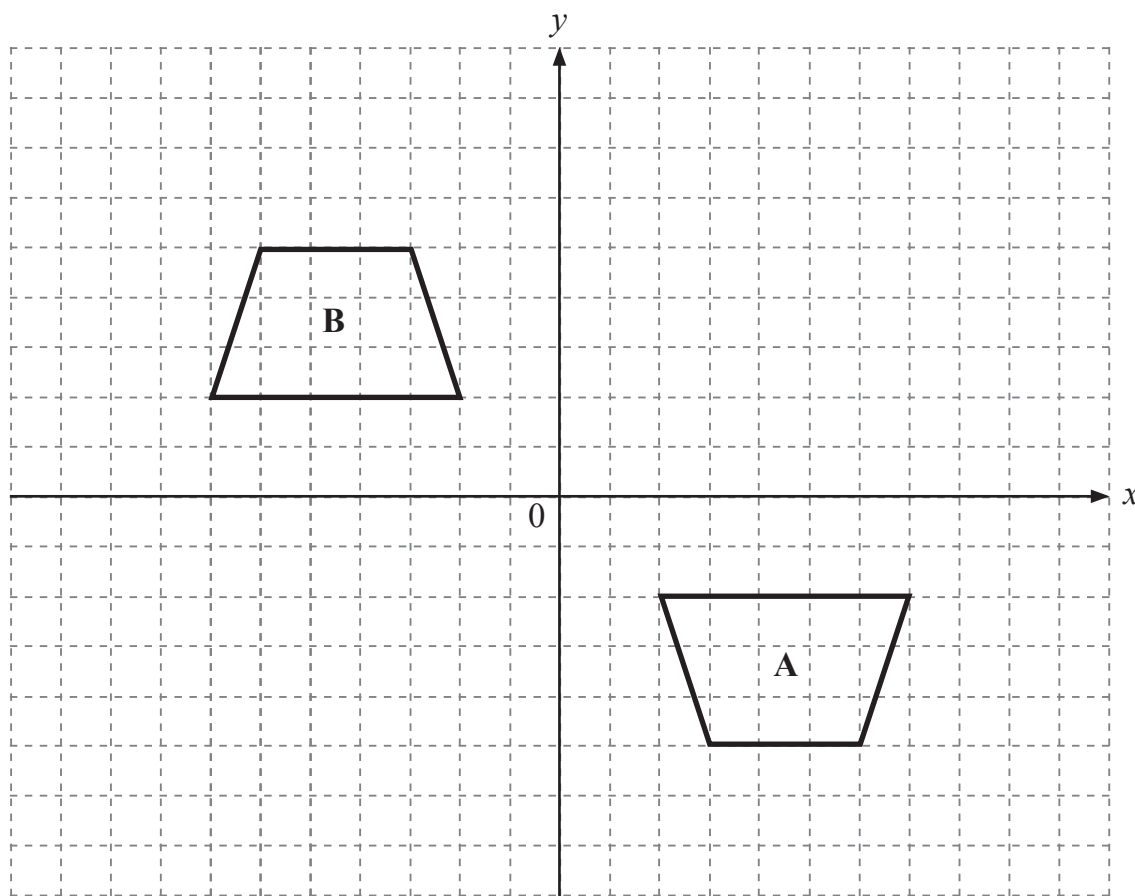
(c) 24.5×1.2

Answer _____ [1]



13 The diagram shows two identical shapes, A and B.

Describe fully the single transformation which takes shape A to shape B.



Answer _____ [3]

[Turn over



14 110110 is a binary number.

20 is a decimal number.

Work out the total of the two numbers.

Give your answer as a binary number.

Answer _____ [3]



15 Use a ruler and compasses to construct the perpendicular from the point P to the line shown.

Leave all construction arcs and lines.

P ×



[2]

[Turn over



16

7, 10, 13, 16, ...

Using the n th term, find the smallest term in the sequence above which is bigger than 1000

Show your working.

Answer _____ [5]





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September 1st is on a Sunday.

Nina has applied to do her driving test in September.

No test dates are given on a Sunday.

Nina is unable to do her test on Mondays or Fridays due to work.

What is the probability that Nina is given a test date that **she cannot** do?

Answer _____ [3]



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THIS IS THE END OF THE QUESTION PAPER

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Question Number	Marks
1	
2	
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Total Marks	
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Examiner Number

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