



Rewarding Learning

General Certificate of Secondary Education
November 2021

Centre Number

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Candidate Number

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Mathematics

Unit M5 Paper 1
(Non-Calculator)
Foundation Tier



[GMC51]

GMC51

THURSDAY 2 DECEMBER, 9.15am–10.15am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page. **You are provided with Foundation Tier Additional Support Materials for use with this paper.**

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 sixteen** 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.

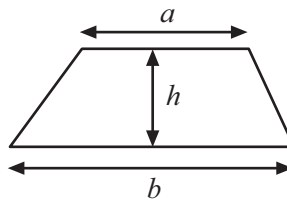
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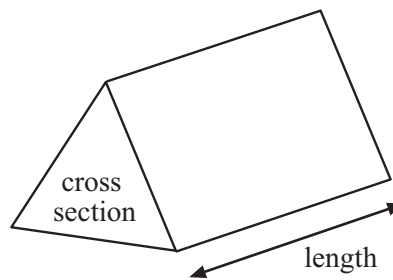
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Formula Sheet

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



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



1 (a) Which digit **in the answer** is incorrect in this subtraction?

Circle your answer.

$$\begin{array}{r} 803 \\ - 175 \\ \hline 638 \end{array} \quad [1]$$

(b) (i) Which **digit in the answer to** this division is wrong?

Circle your answer.

$$7 \overline{) 92763} \begin{array}{r} 138 \\ 9 \quad 27 \quad 63 \end{array} \quad [1]$$

(ii) What should the correct digit be?

Answer _____ [1]



- 2 (a) A pizza is cut into 8 pieces, each weighing 128 g.



Source: © Getty Images

What is the total weight of all the pieces?

Answer _____ g [2]

- (b) A petrol pump delivers 2.96 litres in 5 seconds.

Estimate how many litres it will deliver in one minute.

Answer _____ litres [2]



3 The number of pupils in each year group at Tower School for Boys and Girls is shown.

Year group	8	9	10	11	12
Number of pupils	48	42	61	52	47

A pupil is chosen at random.

(a) Which year group is the pupil chosen most likely to belong to?

Answer Year _____ [1]

(b) Which year group is the pupil chosen least likely to belong to?

Answer Year _____ [1]

A pupil is chosen at random from Year 12

Lara says:



**There is the same likelihood
of a boy being chosen as a girl.**

(c) Explain why Lara is wrong.

Answer _____
_____ [1]

[Turn over



4 Pete puts a **2-digit number** into his calculator and multiplies it by 10

He looks at the new number.

(a) Fill in **one other** digit you know he must see on his calculator.

8		
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[1]

(b) Pete starts **with the same** 2-digit number.

This time he multiplies it by 1000

He looks at the new number.

Fill in **all** the missing digits that he sees on his calculator.

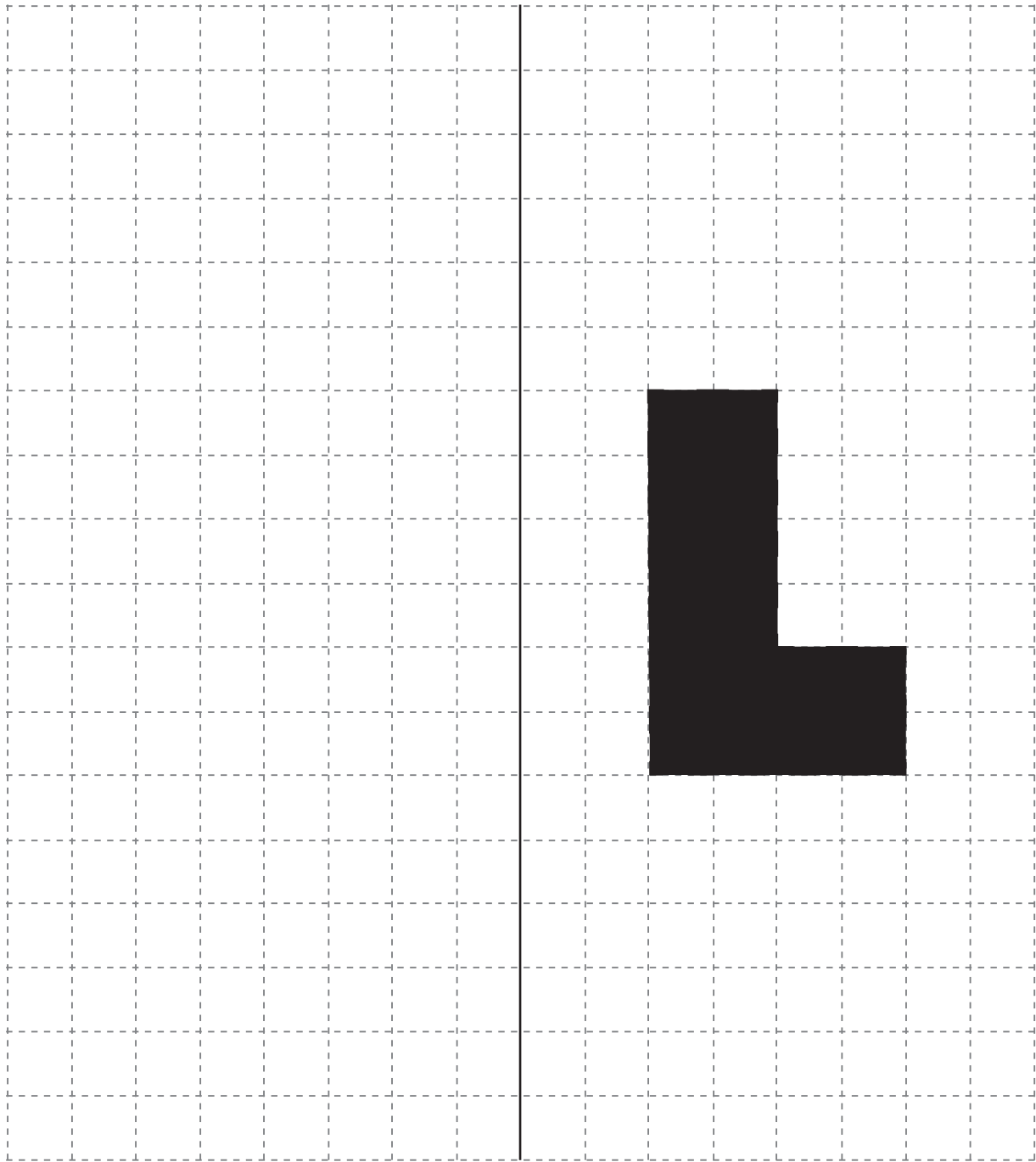
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[1]



5 (a) Reflect the shape in the mirror line.

mirror
line



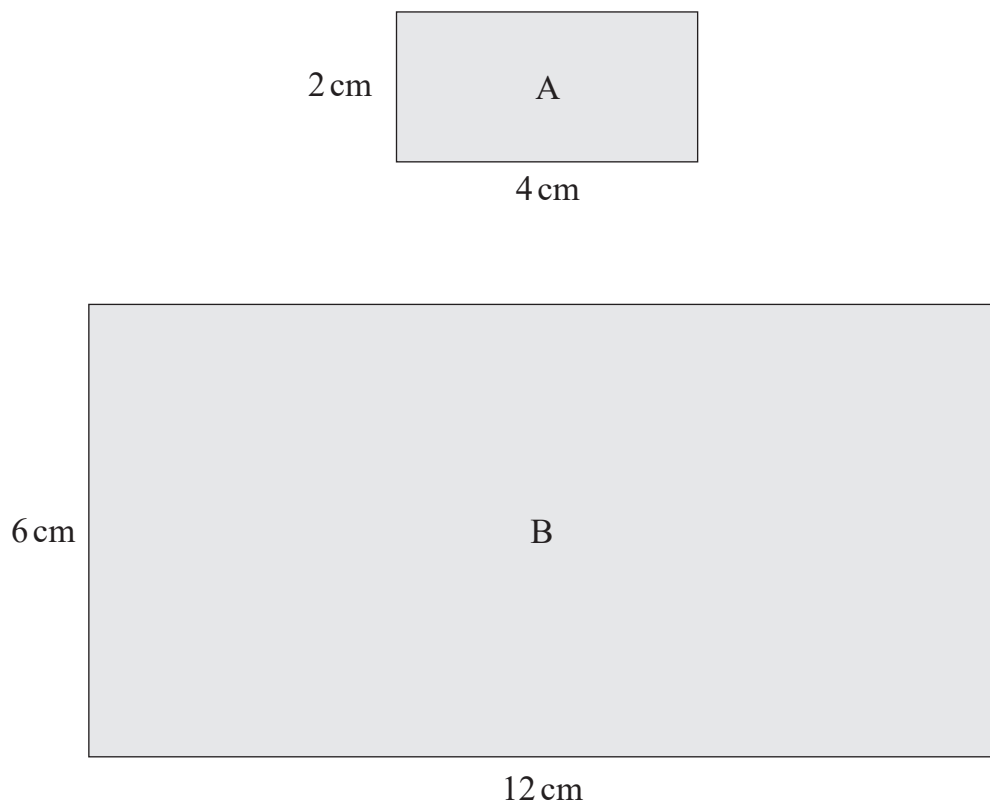
[1]

[Turn over



(b) Rectangle B is an enlargement of Rectangle A.

What is the scale factor?



Answer _____ [1]



6 (a) Work out the missing number.

$$54 \times 4 \times \square = 5400$$

Answer _____ [1]

(b) Work out the missing number.

$$68 \times 40 + 68 \times \square = 6800$$

Answer _____ [1]



7 There are 45 000 people in the town of Arrondale.

(a) $\frac{2}{9}$ of the people are children.

How many are children?

Answer _____ [2]

(b) 30% of the people in Arrondale are over 65

How many are over 65?

Answer _____ [2]



8 Grace cannot divide a number by 36

Her friend Chloe says,

“That’s easy. Divide first by 4 and then divide by 9 as $4 \times 9 = 36$ ”

Use Chloe’s method to divide 5238 by 54

Show your work.

Answer _____ [2]

[Turn over



9 800 students attend Clarendon College.

15% of them are in Year 11

10% of Year 11 students are in the Spanish class.

Of **all** the students in Clarendon College, how many **are not** in the Year 11 Spanish class?

Answer _____ [3]



10 Each new number in a sequence is found using the rule

multiply the previous number by 3 and then subtract 5

Find the next two numbers in this sequence.

2 , _____ , _____

[2]

[Turn over



11 A bag contains five counters, each one a different colour.

The colours are red (R), green (G), blue (B), white (W) and yellow (Y).

Daniel takes a counter at random from the bag.

Daniel now tosses a fair coin.

One possible outcome is (red, heads), which can be written as (R, H).

(a) List all the possible outcomes for this experiment in this way in the two-way table below.

One has already been done for you.

		Counter (colour)				
		R	G	B	W	Y
Coin	H	(R, H)				
	T					

[2]

(b) What is the probability that the outcome is (B, H)?

Answer _____ [1]

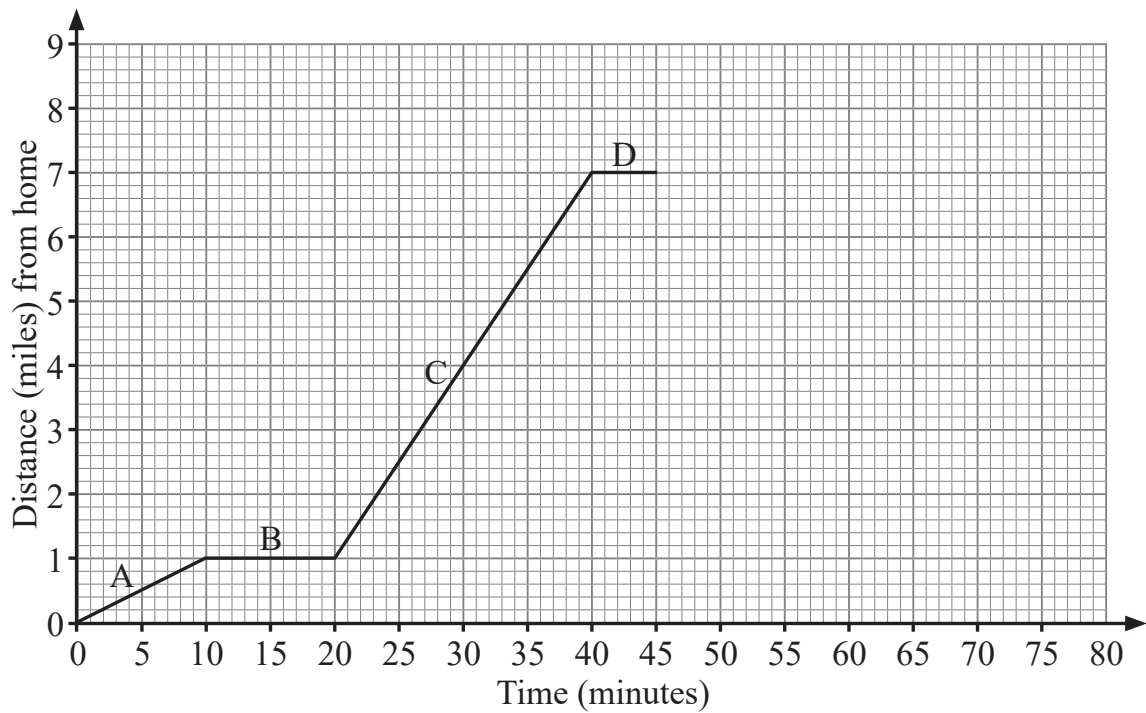
(c) What is the probability that the outcome of this experiment contains a green (G) or a tail (T) or both of these?

Answer _____ [2]



12 Mike is out for a bicycle ride. He starts from home.

The graph shows four stages of his ride labelled A, B, C and D.



(a) Which stage of the graph shows Mike repairing an **early** puncture?

Answer _____ [1]

(b) What is Mike's average speed during stage C?

Answer _____ mph [1]

(c) Mike travels home at an average speed of 14 mph.

Complete the final stage of Mike's bicycle ride on the graph. [2]

[Turn over



13

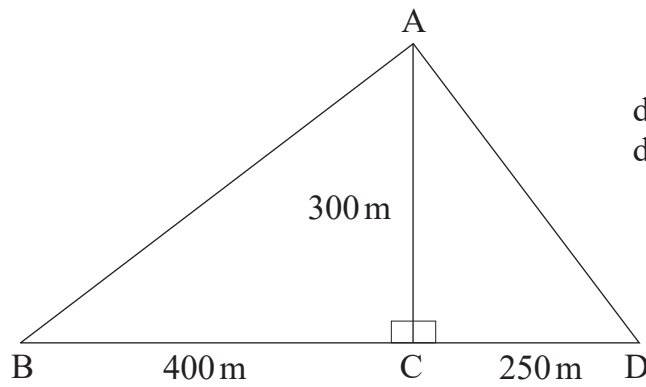


diagram not
drawn accurately

(a) In the space below, make a scale drawing of the diagram ABCD shown above.

Use a scale of 1 cm to 50 m.

B^x

[3]

(b) Use your scale drawing to calculate the actual length of AB.

Answer AB = _____ m [1]



14 This recipe makes 16 scones with the following ingredients.

Ingredients

- 250 g flour
- 1 tsp baking powder
- 40 g butter
- 25 g sugar
- 1 large egg
- about 100 ml milk



Source: Getty Images 609903116

(a) Paul wants to make 20 scones.

How much butter will he need?

Answer _____ g [2]

(b) Paul has 300 g of flour.

Has he enough flour to make 20 scones?

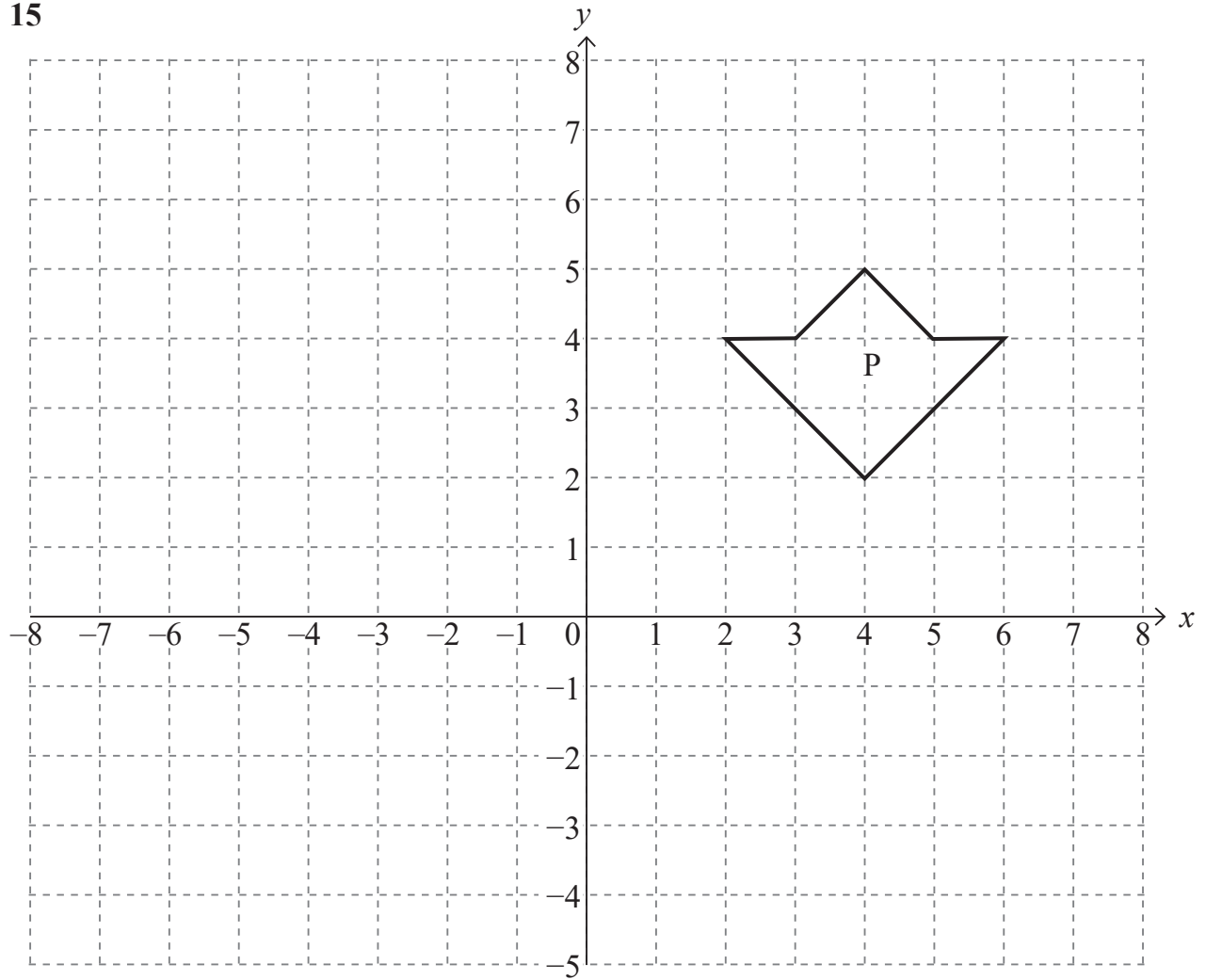
Show all your working.

Answer _____ because _____ [2]

[Turn over



15



- (a) On the grid above translate the shape P
6 units left and 5 units down.

Label the new shape Q.

[1]

- (b) On the same grid, rotate the shape P
 90° anticlockwise about the origin.

Label the new shape R.

[3]



16 A 6-sided dice is biased.

The table below gives the probabilities of getting a 1, 2, 3, 4 and 5 when this dice is rolled.

Outcome	1	2	3	4	5	6
Probability	0.13	0.17	0.2	0.11	0.14	

Work out the probability of getting a 6 when this dice is rolled.

Answer _____ [2]

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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