



Rewarding Learning

General Certificate of Secondary Education  
January 2014

Centre Number

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Candidate Number

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## Mathematics

Unit T5 Paper 2

(With calculator)

Foundation Tier



[GMT52]

\*GMT52\*

WEDNESDAY 15 JANUARY 10.45am–11.45am

### 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 box, around each page, on blank pages or tracing paper.**

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

Answer **all thirteen** questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You **may** 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.

Functional Elements will be assessed in this paper.

Quality of written communication will be assessed in **questions 2 and 3.**

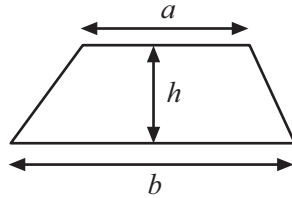
You should have a calculator, ruler, compasses and a protractor.

The Formula Sheet is on page 2.

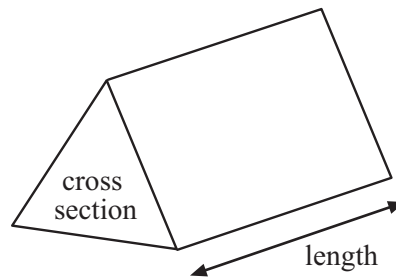


# Formula Sheet

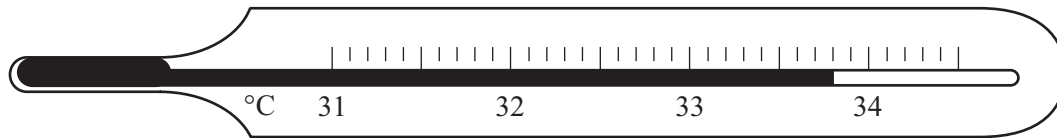
$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$



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

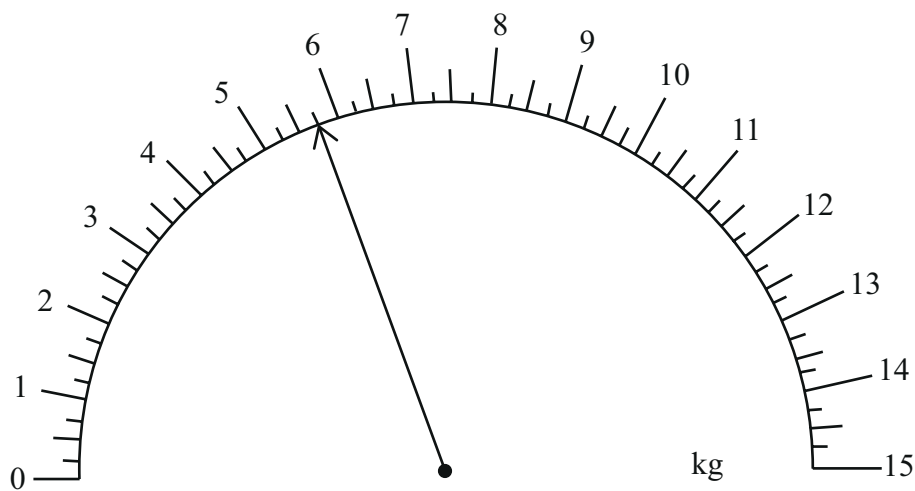


1 (a) Write down the temperature shown on the thermometer.



Answer \_\_\_\_\_ °C [1]

(b) (i) Write down the weight shown by the arrow below.



Answer \_\_\_\_\_ kg [1]

(ii) An extra 3.5 kg is added.  
Draw an arrow to show the **total** weight now on the scale. [2]

Examiner Only

Marks Remark

Total Question 1

[Turn over



Quality of written communication will be assessed in this question.

2 Jean and Rose each have a bag of sweets.  
Jean has equal numbers of toffee, mint and fruit sweets.  
Rose has twice as many mint sweets as fruit sweets but she has no toffee sweets.

They each take one sweet at random from their own bag.

(a) Who is more likely to take a mint sweet? **Explain your answer clearly.**

\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_ [2]

(b) Who is more likely to take a fruit sweet? **Explain your answer clearly.**

\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_ [2]

Examiner Only

Marks Remark

Total Question 2



Quality of written communication will be assessed in this question.

- 3 Jill has a part-time job in the petrol station.  
The pay is £7 per hour.  
She earns time and a half on Saturday and double time on Sunday.  
Last week she worked 6 hours on Monday, 6 hours on Saturday and 4 hours on Sunday.  
How much did she earn in total?  
**Show your work clearly.**

Answer £ \_\_\_\_\_ [5]

Examiner Only

Marks Remark

Total Question 3

[Turn over



- 4 Every car salesperson with NewAutos earns a basic monthly salary of £1800  
In addition they earn a bonus of £75 for every car that they sell in the month.

$$\text{Total monthly salary} = \text{£1800} + \text{Number of cars sold} \times \text{Bonus per car sold}$$

- (a) Eileen is a car salesperson with NewAutos.  
She sold 15 cars in April.  
Work out her total monthly salary for April.

Answer £ \_\_\_\_\_ [2]

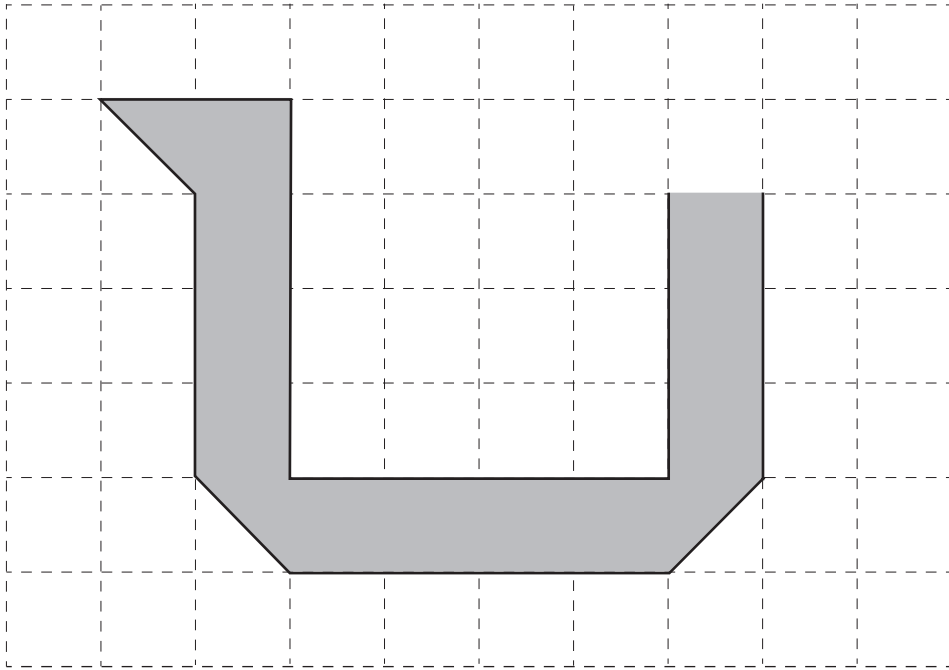
- (b) Jim is another car salesperson with NewAutos.  
In May his total monthly salary was £3525  
Work out how many cars Jim sold in May.

Answer \_\_\_\_\_ cars [2]

Examiner Only	
Marks	Remark
Total Question 4	

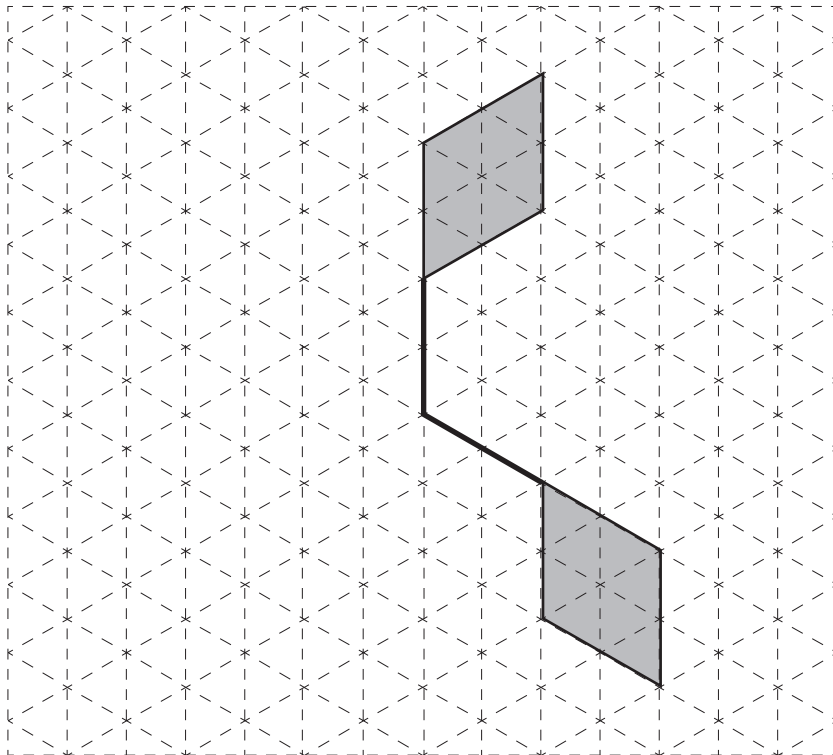


- 5 (a) Shade one square and one triangle in the diagram so that the complete shaded shape has one line of symmetry.



[2]

- (b) Complete the shape **below** so that the completed shape has rotational symmetry of order 3.



[2]

Examiner Only

Marks	Remark
Total Question 5	

[Turn over



6 Mary has 63 square tiles and she wants to arrange them all to make a rectangle.

Write down the length and width of two **different** rectangles that she could make.

Answer 1st rectangle length \_\_\_\_\_ , width \_\_\_\_\_ [1]

2nd rectangle length \_\_\_\_\_ , width \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark
Total Question 6	

7 700 people arrive at a bus station and have to be transferred to a local airport.

The airport buses can carry a maximum of 48 passengers.

(a) How many buses are filled?

Answer \_\_\_\_\_ buses [1]

(b) Calculate the number of people who have to travel in the last bus to ensure all 700 people reach the airport.

Answer \_\_\_\_\_ people [1]

Total Question 7	





- 8 Bradley was cycling at an average speed of 25 mph.  
Convert this speed to km/h.

Examiner Only

Marks Remark

Answer \_\_\_\_\_ km/h [2]

Total Question 8

- 9 A box contains a number of packets of crisps of different flavours.  
A packet of crisps is taken at random from the box.  
Some of the probabilities of taking each flavour are shown in the table below.

Flavour	Cheese	Vinegar	Bacon	Sausage	Beef
Probability	0.3	0.12		0.25	0.05

- (a) Calculate the probability that the crisps are Bacon flavour.

Answer \_\_\_\_\_ [2]

- (b) Calculate the probability that the crisps are **not** Vinegar flavour.

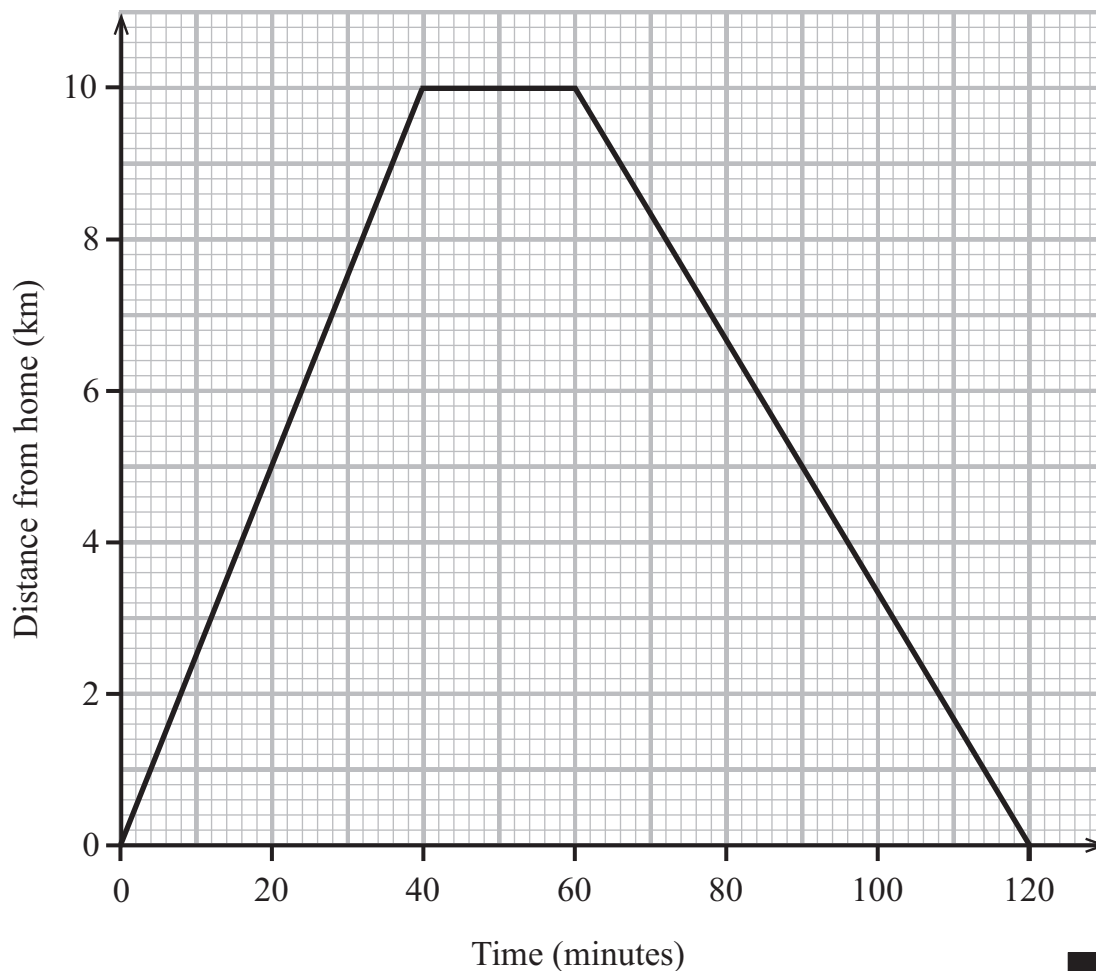
Answer \_\_\_\_\_ [1]

Total Question 9

[Turn over



- 10 Katie went on a cycling trip from her home.  
The diagram below shows the distance/time graph for her complete journey.



- (a) What is the meaning of the horizontal line on the graph?

Answer \_\_\_\_\_ [1]

- (b) How far did she travel in the first 30 minutes?

Answer \_\_\_\_\_ km [1]

Examiner Only	
Marks	Remark



(c) How long did it take her to travel the first 4 kilometres?

Answer \_\_\_\_\_ minutes [1]

(d) Where was Katie after 120 minutes?

Answer \_\_\_\_\_ [1]

(e) What was the average speed for the first 30 minutes?

Answer \_\_\_\_\_ km/h [1]

(f) At what stage of the trip was she travelling at the fastest average speed?

Answer \_\_\_\_\_ [1]

(g) After how many minutes had she travelled a distance of 14 kilometres?

Answer \_\_\_\_\_ minutes [1]

Examiner Only

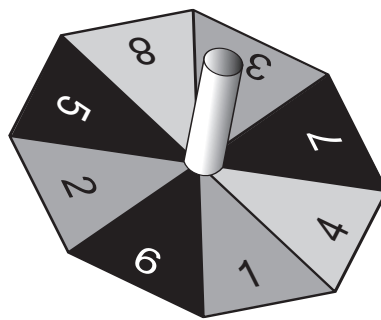
Marks Remark

Total Question 10

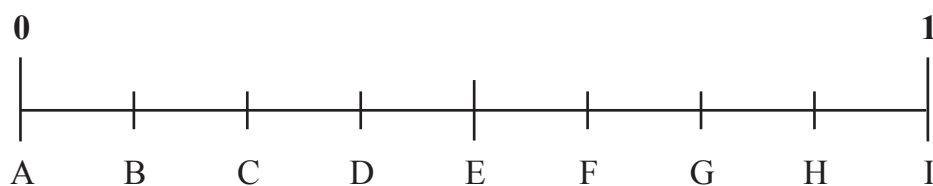
[Turn over



11 This spinner is a regular octagon.



- (a) The spinner is spun once.  
Below is a probability scale.



From the scale **write down the letter** which represents

- (i) the probability of the spinner landing on the number 10

Answer \_\_\_\_\_ [1]

- (ii) the probability of the spinner landing on an even number

Answer \_\_\_\_\_ [1]

- (iii) the probability of the spinner landing on the number 3

Answer \_\_\_\_\_ [1]

- (iv) the probability of the spinner landing on a multiple of 4

Answer \_\_\_\_\_ [1]



(b) The spinner is spun 60 times. How many times would you expect it to land on a number greater than 2?

Answer \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark
Total Question 11	
Total Question 12	

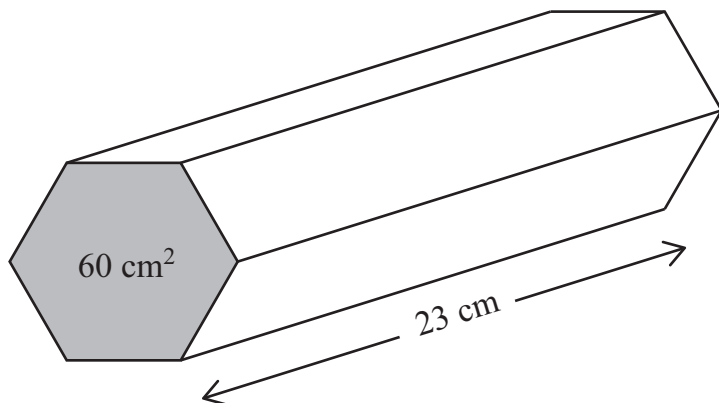
12 Divide £292 in the ratio 1 : 3 : 4

Answer \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ [3]

[Turn over



- 13 A solid hexagonal prism of mass 8600 g has a cross-sectional area of  $60 \text{ cm}^2$  and length 23 cm.



Calculate the density of the prism in  $\text{g/cm}^3$ .

**Give your answer to an appropriate degree of accuracy.**

Answer \_\_\_\_\_  $\text{g/cm}^3$  [4]

Examiner Only

Marks Remark

Total Question 13





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**THIS IS THE END OF THE QUESTION PAPER**

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**DO NOT WRITE ON THIS PAGE**

For Examiner's use only	
Question Number	Marks
1	
2	
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11	
12	
13	

<b>Total Marks</b>	
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Examiner Number

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