



General Certificate of Secondary Education  
January 2009

## Mathematics



Module N5 Paper 2  
**(With calculator)**  
Foundation Tier  
[GMN52]

WEDNESDAY 14 JANUARY  
**3.00 pm – 4.00 pm**



StudentBounty.com

71	
Candidate Number	
<input type="text"/>	

### TIME

1 hour.

### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.  
Write your answers in the spaces provided in this question paper.  
Answer **all sixteen** questions.  
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

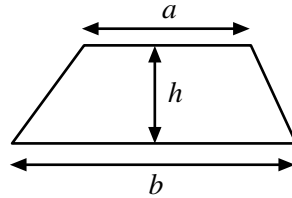
### INFORMATION FOR CANDIDATES

The total mark for this paper is 56.  
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 calculator, ruler, compasses, set-square and protractor.  
The Formula Sheet is on page 2.

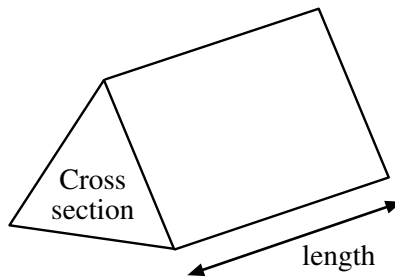
For Examiner's use only	
Question Number	Marks
1	
2	
3	
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12	
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16	
<b>Total Marks</b>	

# Formula Sheet

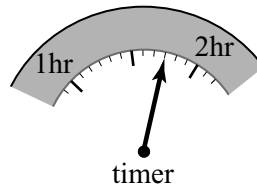
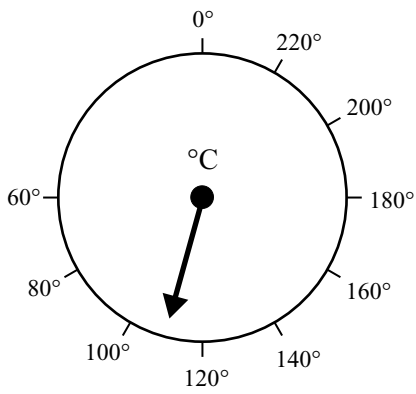
$$\text{Area of trapezium} = \frac{1}{2} (a + b)h$$



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

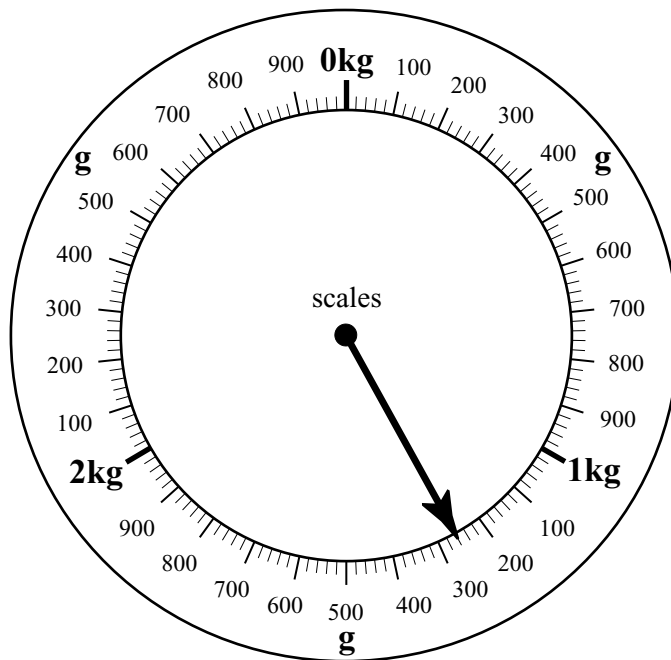


1



The dials above are from a temperature indicator and timer.

- (a) What is the temperature indicated? Answer \_\_\_\_\_ °C [1]
- (b) Write down the reading from the timer. Answer \_\_\_\_\_ [1]

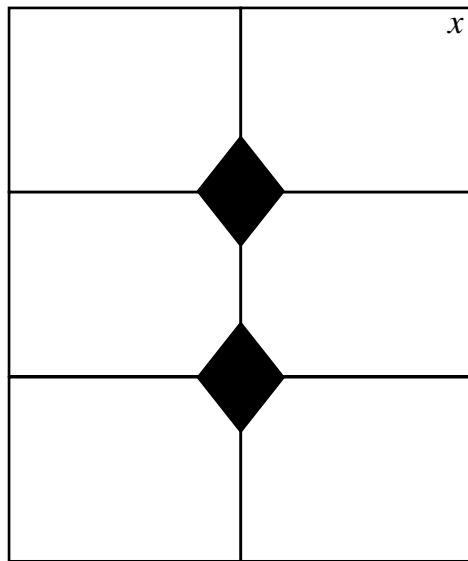


The diagram shows the dial of kitchen scales marked in kilograms and grams.

- (c) What reading, in kilograms and grams, is indicated by the arrow?  
Answer \_\_\_\_\_ kg \_\_\_\_\_ g [1]
- (d) On the diagram, indicate with an arrow, a reading of 760 grams. [1]
- (e) What is the difference in grams between the reading in (c) and the reading in (d)?  
Answer \_\_\_\_\_ g [1]

Examiner Only	
Marks	Remark

- 2 The diagram shows a design for a rectangular window. The panes used are of three shapes.



- (a) What is the name given to the shaded shapes?

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

- (b) Complete the following sentence, using suitable mathematical vocabulary to describe the shaded shapes.

Opposite sides are \_\_\_\_\_ and \_\_\_\_\_. [2]

- (c) What type of angle is the angle marked  $x$ ?

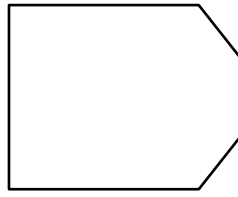
Answer \_\_\_\_\_ [1]

- (d) How many lines of symmetry does each shaded shape have?

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

Examiner Only	
Marks	Remark

- (e) One of the middle panes of glass is drawn. Draw a line of symmetry on it.



[1]

Examiner Only	
Marks	Remark

- 3** A salesman sells computer games.  
His total pay in pounds for a week is given by the formula

$$\text{Total Pay in Pounds} = \text{Basic Wage} + \text{Number of games sold} \times 2.8$$

- (a) How much does the salesman get for each game sold?

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

- (b) If the salesman's basic wage is £155 and he sells 24 games, calculate his total pay for the week.

Answer £ \_\_\_\_\_[2]

Examiner Only	
Marks	Remark

4 (a) Choosing from

likely     unlikely     certain     impossible

complete the sentences below.

It is \_\_\_\_\_ that Easter Sunday will fall on the 25th December.

It is \_\_\_\_\_ that someone I know will win the Lottery draw on Saturday.

It is \_\_\_\_\_ that some of the spectators at a football match were born in the month of December.

It is \_\_\_\_\_ that Manchester United will either win, lose or draw their next match.

[4]

- (b) Megan buys a ticket in a raffle. There are 400 tickets sold, numbered from 1 to 400.  
Find the probability that the winning ticket has a number greater than 250.

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

5  $I = PRT$

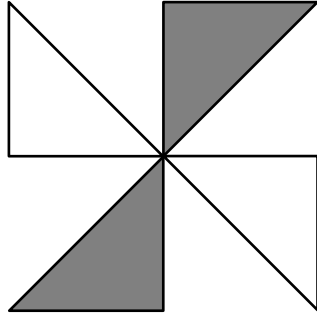
Find the value of  $I$  when  $P = 20$ ,  $R = 8$  and  $T = 0.75$

Answer  $I =$  \_\_\_\_\_[2]

6 (a) Name a quadrilateral which has only one line of symmetry.

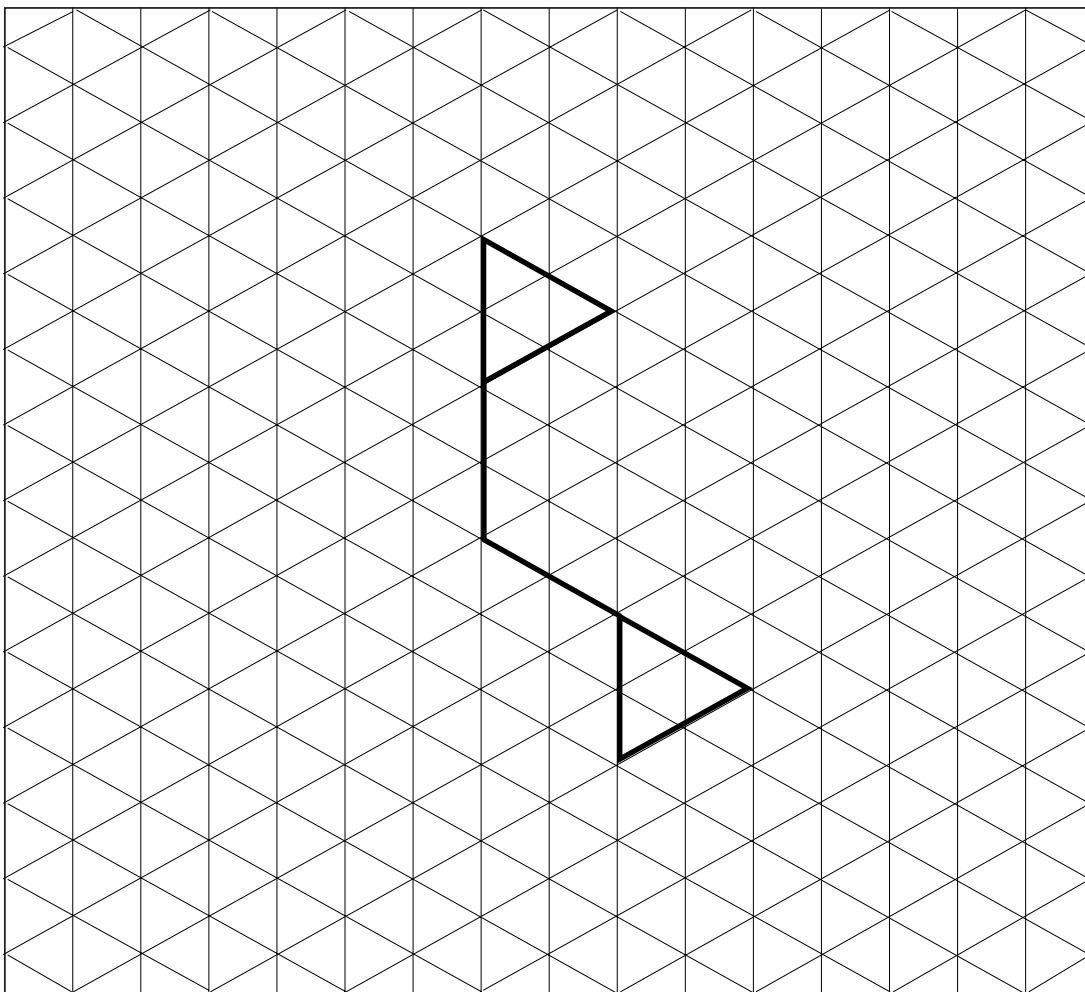
Answer \_\_\_\_\_ [1]

(b) What is the order of rotational symmetry of the shape shown below?



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

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



[2]

Examiner Only	
Marks	Remark

7 One bag contains the letters C, E and A

A second bag contains the numbers 1, 2, 3 and 4

A letter is drawn from the first bag and a number is drawn from the second bag.

(a) List all the possible outcomes from the experiment.

[2]

(b) Find the probability of selecting both the letter A and the number 3

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

8 Charlie bought a cycle on Hire Purchase.

He paid a deposit of £125 and 24 monthly payments of £8.50

At the end of the payments he sold the cycle for £130.

How much did it cost him in total?

Answer £ \_\_\_\_\_ [4]

9 1 litre is approximately  $1\frac{3}{4}$  pints.

How many litres are in 14 pints?

**Show your working.**

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

Examiner Only	
Marks	Remark

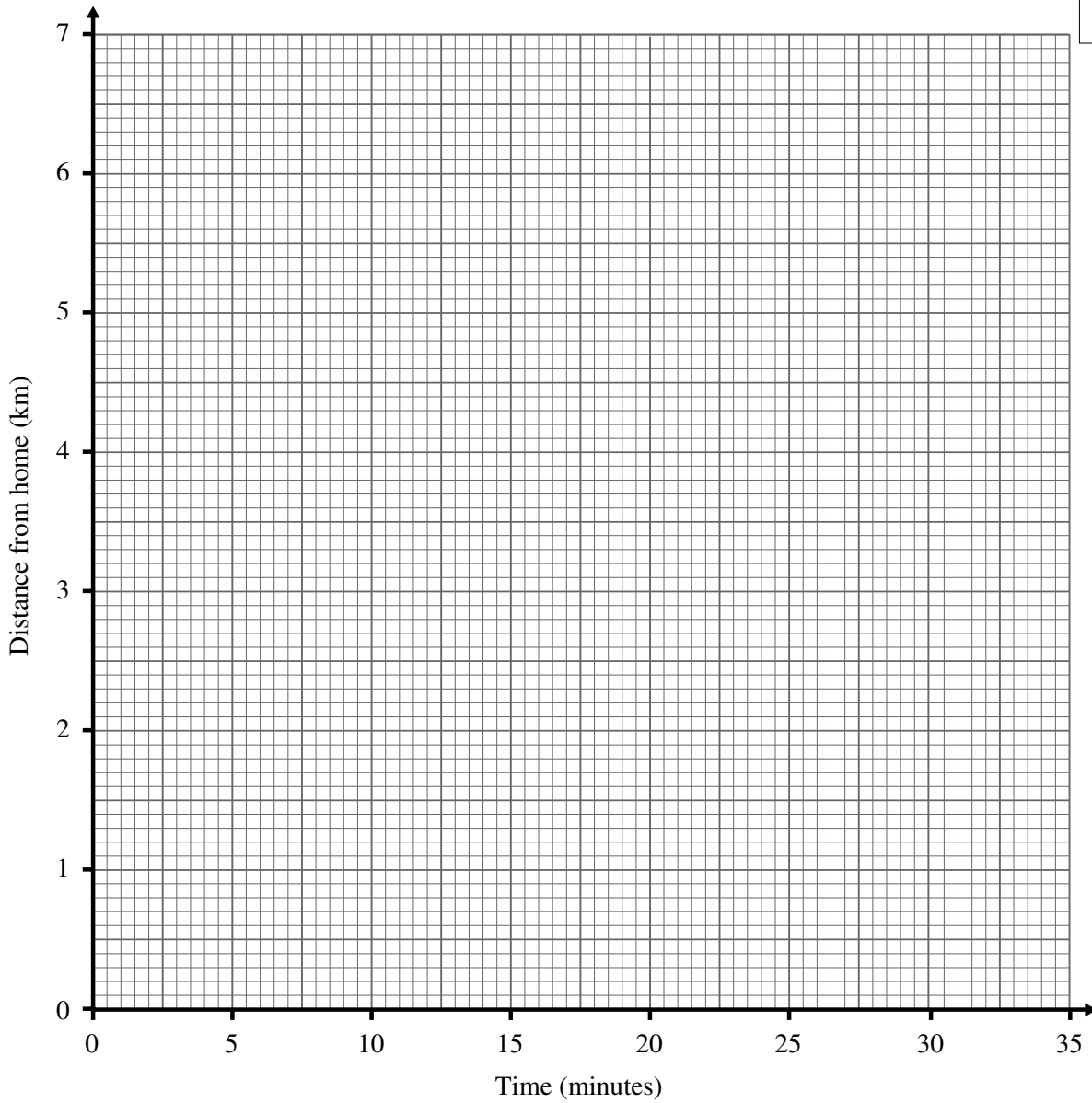


10 John cycles 3 km from home in fifteen minutes and a further 2 km in the next twelve minutes.

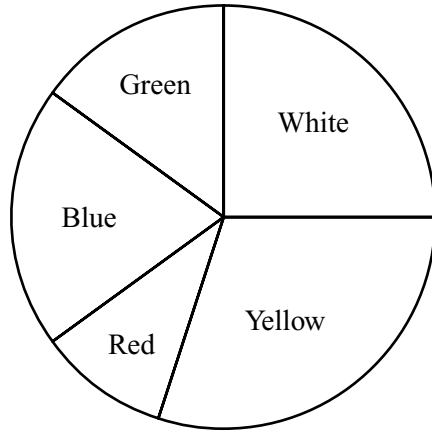
Show his journey on a distance–time graph below.

[2]

Examiner Only	
Marks	Remark







A spinner can land on one of 5 colours. The probability of the spinner landing on four of the colours is given in the table below.

Colour	Red	Blue	White	Yellow	Green
Probability	0.1		0.25	0.3	0.15

(a) What is the probability that the spinner will land on blue?

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

The spinner is spun 600 times.

(b) How many times would you expect the spinner to land on white or green?

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

**14** Which of ‘always odd’, ‘always even’, ‘could be odd or even’ describes the number  $4n - 3$ ? ( $n$  is an integer)

**Explain your answer.**

Answer \_\_\_\_\_

because \_\_\_\_\_

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

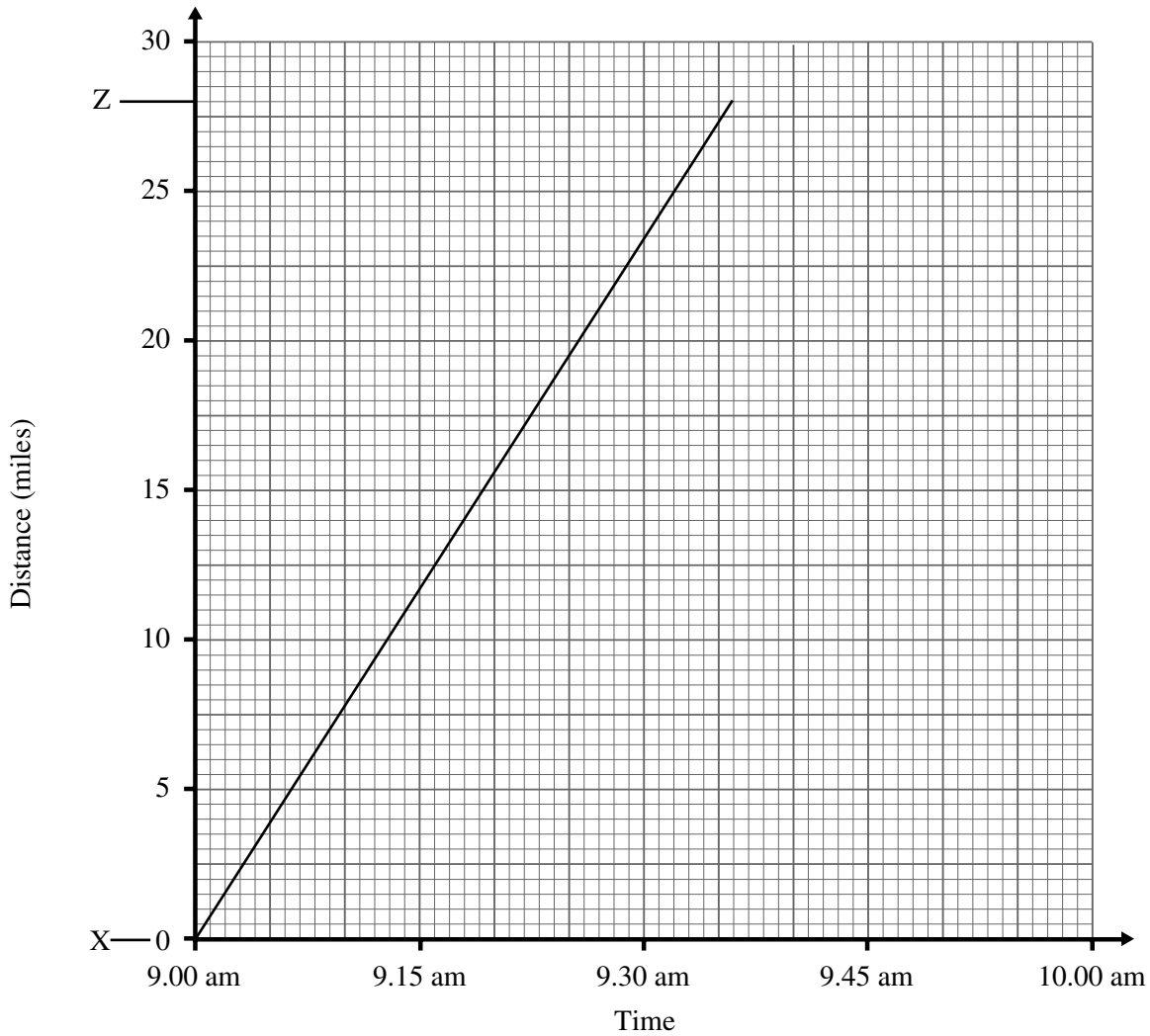
Examiner Only	
Marks	Remark

**15** £8 500 is shared between Alice, Barbara and Carol in the ratio 10 : 9 : 6 respectively.  
Calculate the amount each one gets.

Alice £ \_\_\_\_\_  
Barbara £ \_\_\_\_\_  
Carol £ \_\_\_\_\_ [3]

Examiner Only	
Marks	Remark

- 16 A car travels a total distance of 28 miles from town X to town Z.  
The graph shows its journey.



Calculate the average speed of the car in mph.

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

Examiner Only	
Marks	Remark

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

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