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General Certificate of Secondary Education
2011

Centre Number
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Candidate Number

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Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier



[GMN51]



GMN51

MONDAY 6 JUNE
1.30 pm – 2.30 pm

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

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

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 ruler, compasses, set-square and protractor.
 The Formula Sheet is on page 2.

Total Marks	[]
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6393

Examiner Number

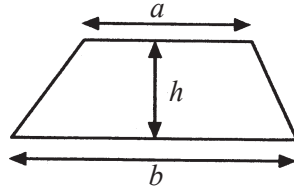
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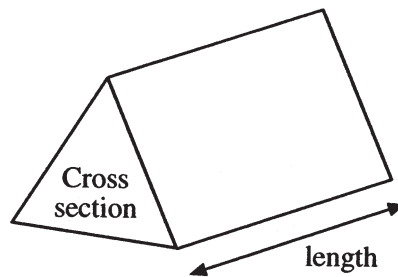
JUNE 11 GMN51

Formula Sheet

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

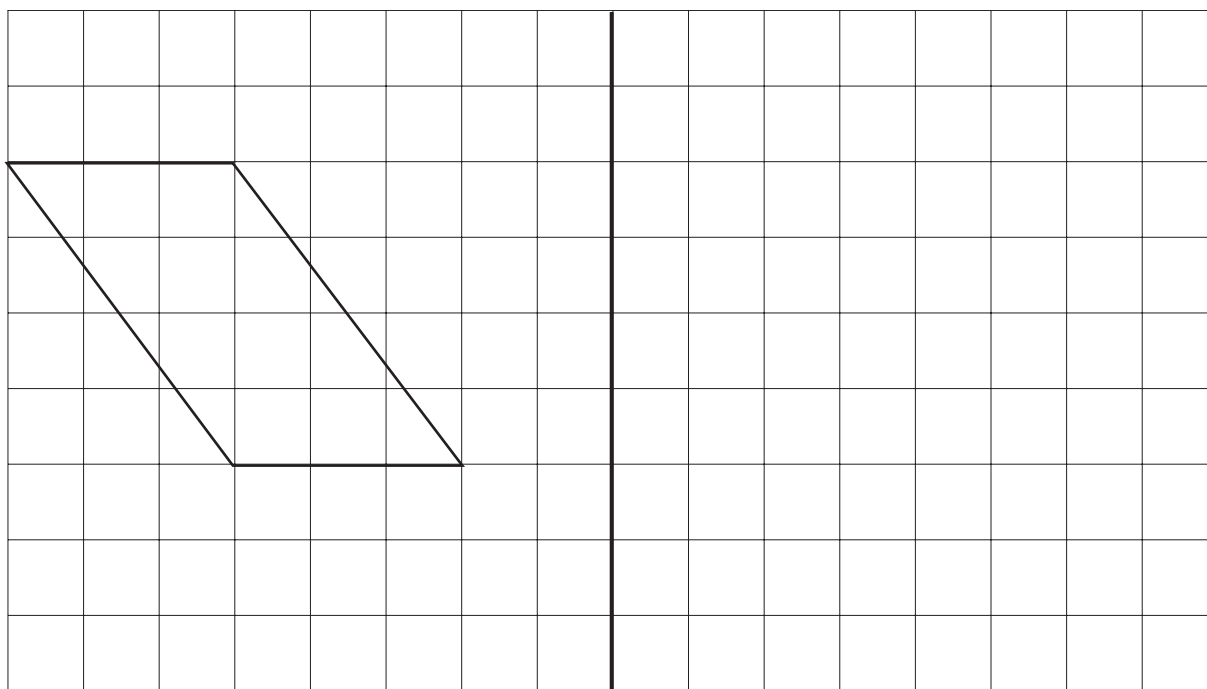


Volume of prism = area of cross section \times length



1 Reflect each of the shapes in the mirror line.

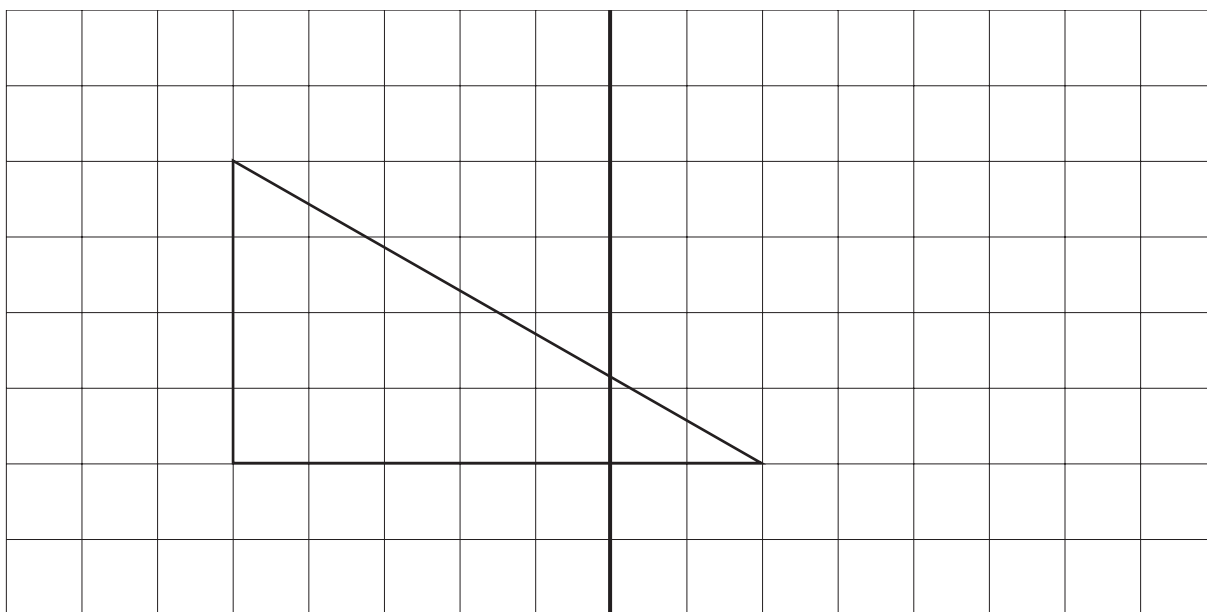
(a)



mirror line

[2]

(b)



mirror line

[2]

Total Question 1	

6393

[Turn over



2 Choose from

Impossible Certain Likely Unlikely
 Very unlikely Evens Very likely

to describe the probability of each of the following. Explain your answers.

(a) An ordinary dice will land on an odd number.

Answer _____ because _____
 _____ [2]

(b) You will sleep some time this week.

Answer _____ because _____
 _____ [2]

Examiner Only

Marks Remark

Total Question 2

Total Question 3

3

TV DEAL

A

Pay £120 deposit
 and £20 per month
 for 12 months

B

Pay nothing now
 One payment of £400
 in six months time

Which is the cheaper way to pay for a TV and by how much?

Answer _____ by £ _____ [4]

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0 4

- 5 (a) Write the word **more** or **less** in the blank space to complete this sentence.

A gallon is _____ than a litre. [1]

- (b) The formula

$$\text{Number of gallons} = (\text{Number of litres} \times \text{two}) \div \text{nine}$$

gives an approximation for converting between litres and gallons.

- (i) Use the formula to convert 36 litres to gallons.

Answer _____ gallons [2]

- (ii) If G is the number of gallons and L is the number of litres write **a formula**, in its simplest form, for G in terms of L.

Answer _____ [3]

Examiner Only	
Marks	Remark
Total Question 5	
Total Question 6	

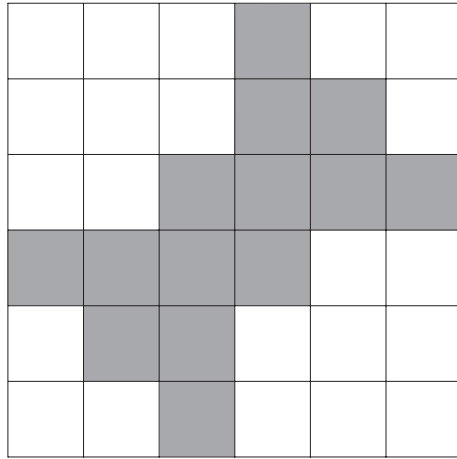
- 6 Which is heavier, a 5 kilogram bag of potatoes or a 10 pound bag of potatoes?

Explain your answer.

Answer _____ because _____
 _____ [2]

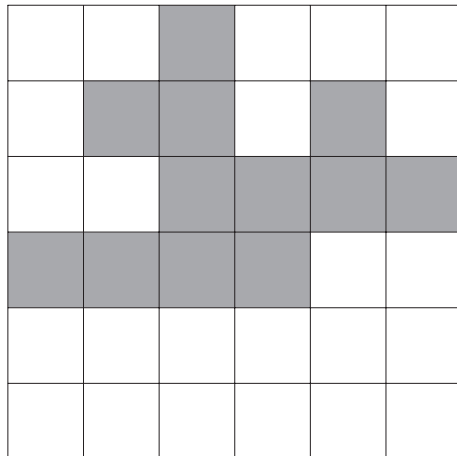


8 (a) (i) Draw all the lines of symmetry on the shaded shape.



[2]

(ii) Shade 4 squares on the grid below so that the pattern will have rotational symmetry of order 4.



[2]

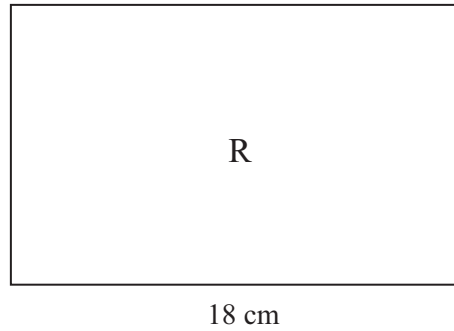
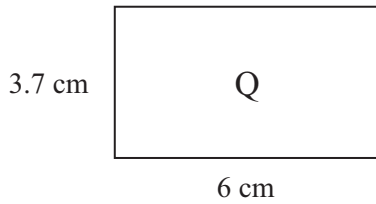
Examiner Only	
Marks	Remark

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0 8

(b)



The diagram shows two rectangles. (Not drawn accurately)

Rectangle R is an enlargement of rectangle Q.

(i) What is the scale factor of the enlargement?

Answer _____ [1]

(ii) How many times bigger is the area of rectangle R than the area of rectangle Q?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 8	
Total Question 9	

9 Rewrite $c - 2 = 10 - b$ to make b the subject.

Write your answer in its simplest form.

Answer $b =$ _____ [2]



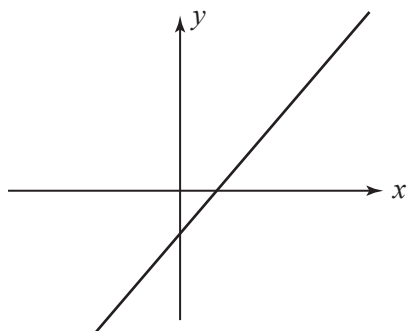
11

$y = x^2 + 2$

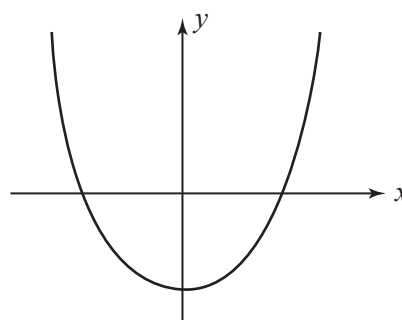
$y = x^2 - 2$

$y = x - 2$

- (a) Below are two graphs. Choose the correct equation from the three listed above to match each graph.

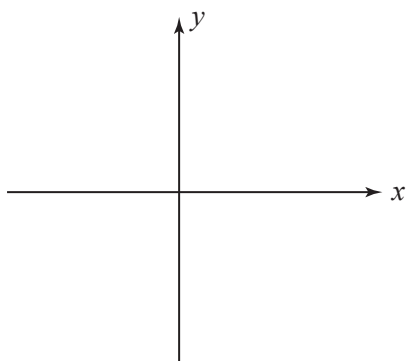


Equation: _____



Equation: _____ [2]

- (b) Sketch the graph of the remaining equation.



[1]

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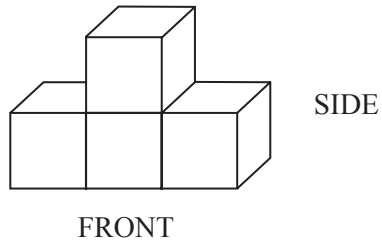
Marks	Remark
Total Question 11	

Total Question 11

[Turn over]



12 Below is a sketch of a 3-D shape.



Draw **(a)** the plan,

[1]

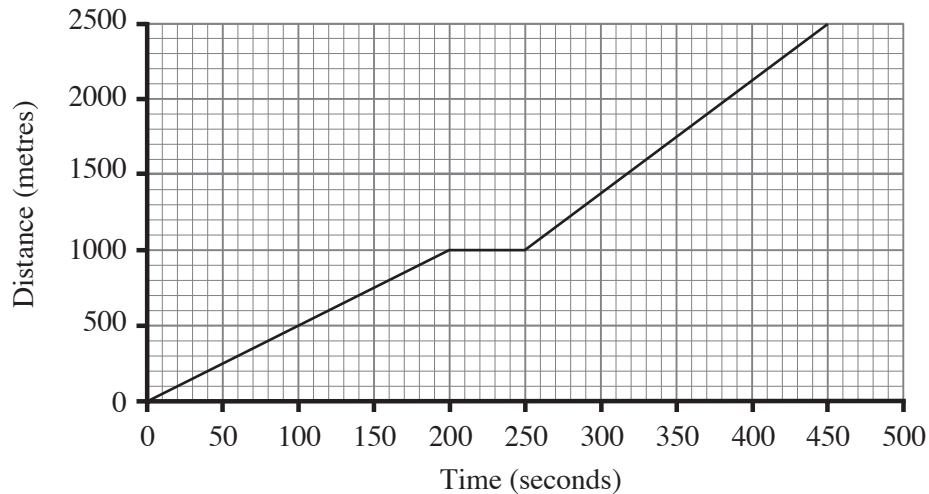
(b) the side elevation.

[1]

Examiner Only	
Marks	Remark
Total Question 12	



13 The graph illustrates Pete's journey as he cycled from home to school.



(a) How far did he travel in the first minute?

Answer _____ m [1]

(b) He stopped at a shop on the way to school.

Calculate his average speed for the journey **between the shop and the school**.

Answer _____ m/s [2]

Examiner Only	
Marks	Remark
Total Question 13	
Total Question 14	

14 Simplify $\frac{m^7}{m \times m^2}$

Answer _____ [2]



15 Jack divided marbles between himself and Jill in the ratio 4 : 3

Jack then had 84 marbles.

How many marbles were there in total?

Answer _____ [2]

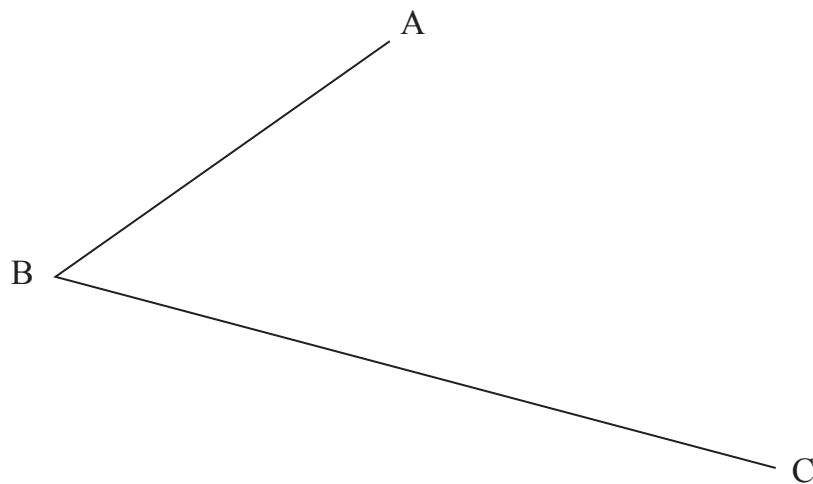
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Marks Remark

Total Question 15

16 Use ruler and compasses to construct the bisector of the angle ABC.

You must show all construction lines.



[2]

THIS IS THE END OF THE QUESTION PAPER

Total Question 16

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