Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2011

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	
Total Marks	

Examiner Number

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.

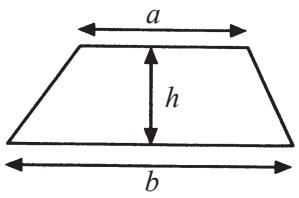
INFORMATION FOR CANDIDATES

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.

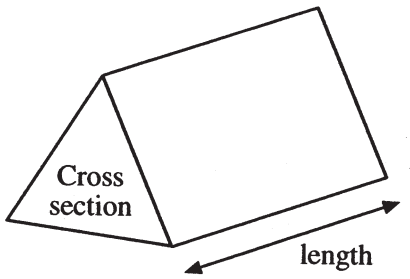
JUNE11GMN51

Formula Sheet

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

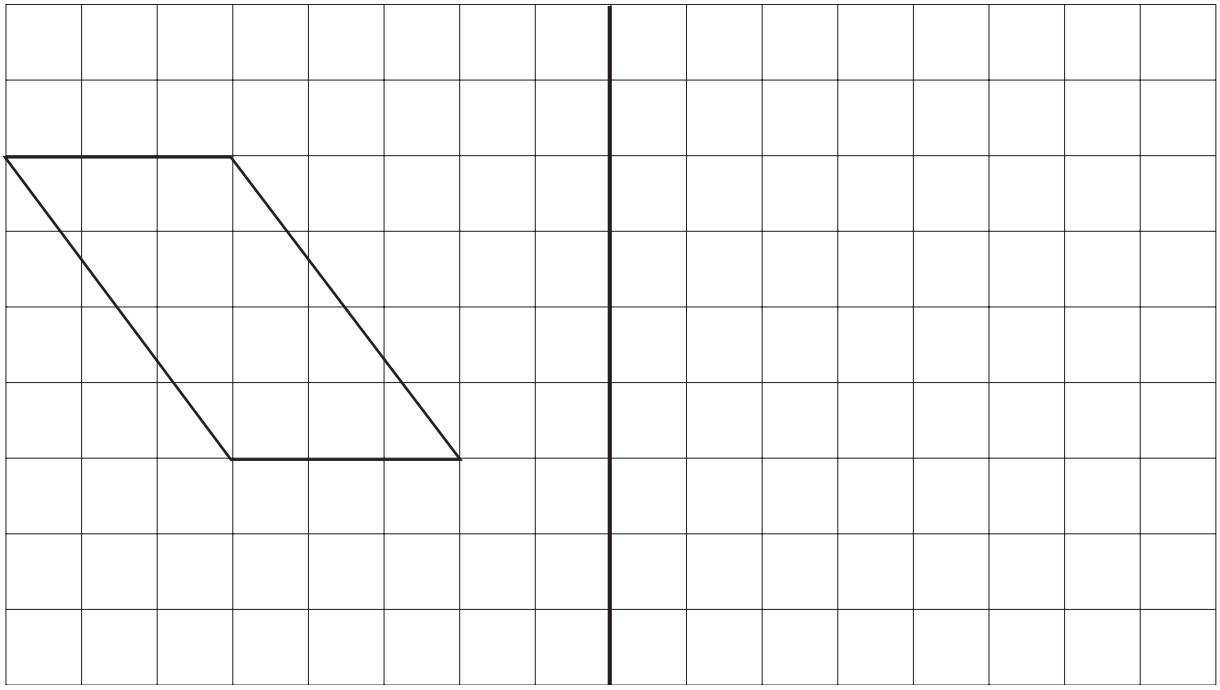


Volume of prism = area of cross section × length



1 Reflect each of the shapes in the mirror line.

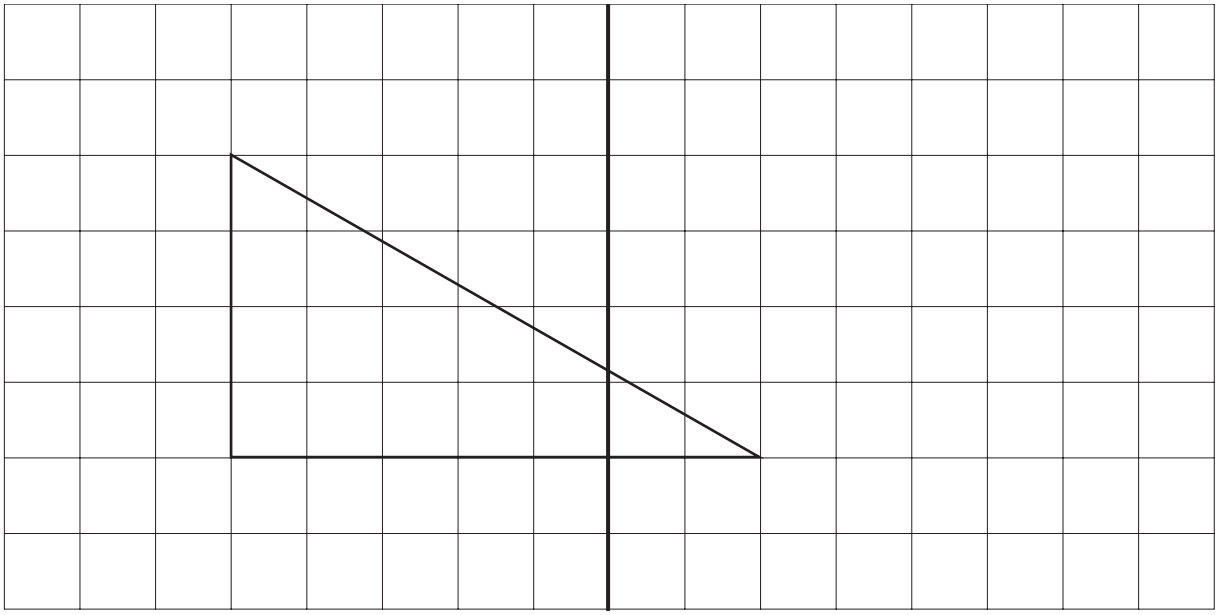
(a)



mirror line

[2]

(b)



mirror line

[2]

Total Question 1	

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]

Total Question 2

3 TV DEAL

A	**B**
Pay £120 deposit and £20 per month for 12 months	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]

Total Question 3

Examiner Only

Marks | Remark

4 **(a)** **Estimate** the total length of 82 cars whose average length is 3.8 metres.

Answer _____ m [2]

(b) **Estimate** the area of a rectangular pond with length 19.6 metres and breadth 7.8 metres.

Answer _____ m^2 [2]

(c) **Estimate** $\sqrt{79}$

Answer _____ [1]

(d) **Estimate** how many toys costing £5.95 each could be bought for £55.

Answer _____ toys [2]

Examiner Only	
Marks	Remark
Total Question 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

Number of gallons = (Number of litres × two) ÷ 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]

Total Question 5

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

Explain your answer.

Answer _____ because _____

_____ [2]

Total Question 6

Examiner Only

Marks | Remark

7 Calculate

Examiner Only	
Marks	Remark

(a) $8 + 4 \div 2$

Answer _____ [1]

(b) $4 + 2(9 - 3)$

Answer _____ [1]

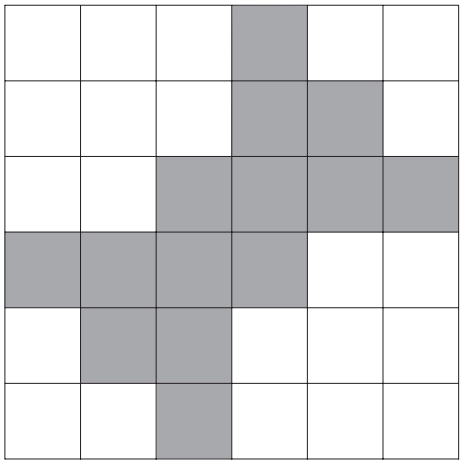
(c) $5 \times 2 + 14 \div 2$

Answer _____ [1]

Total Question 7	

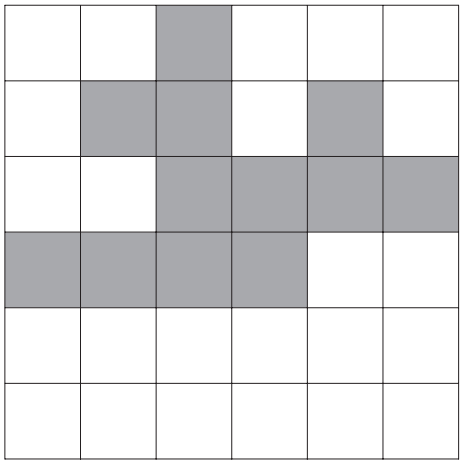
[Turn over

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



[2]

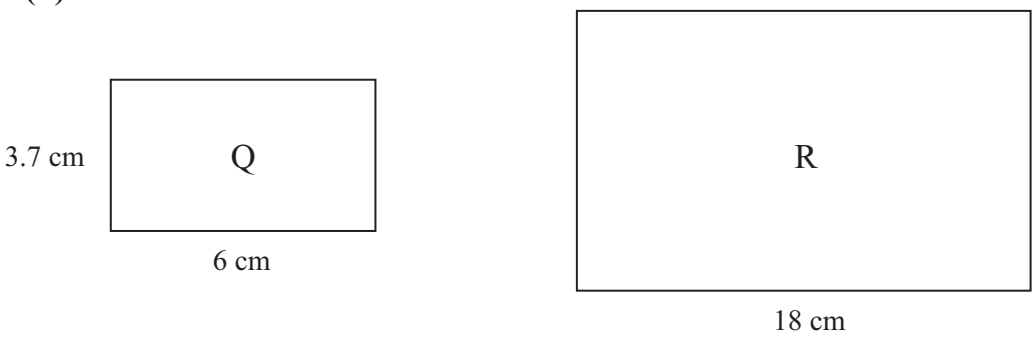
(ii) Shade 4 squares on the grid below so that the pattern will have rotational symmetry of order 4.



[2]

Examiner Only	
Marks	Remark

(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]

Total Question 8

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

Write your answer in its simplest form.

Answer $b =$ _____ [2]

Total Question 9

Examiner Only

Marks | Remark

10 **(a)** Write down the reciprocal of 3

Answer _____ [1]

(b) Calculate

$(-45) \div (-9)$

Answer _____ [1]

(c) Given that $84 \times 356 = 29904$, find

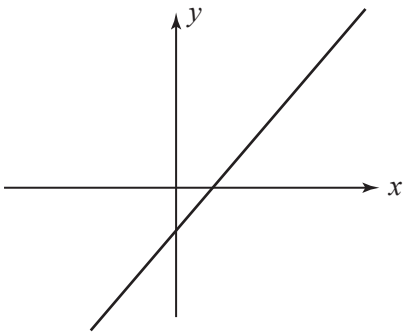
$$\frac{29904}{8.4}$$

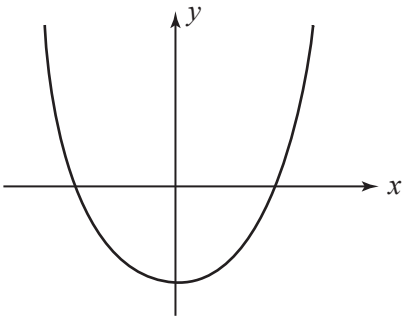
Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 10	

11 $y = x^2 + 2$ $y = x^2 - 2$ $y = x - 2$

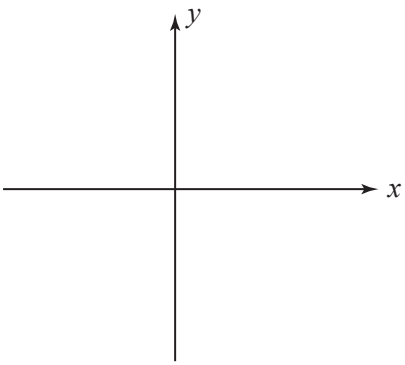
(a) Below are two graphs. Choose the correct equation from the three listed above to match each graph.





Equation: _____ Equation: _____ [2]

(b) Sketch the graph of the remaining equation.

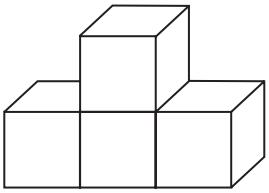


[1]

Examiner Only	
Marks	Remark
Total Question 11	

[Turn over

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



SIDE

FRONT

Draw **(a)** the plan,

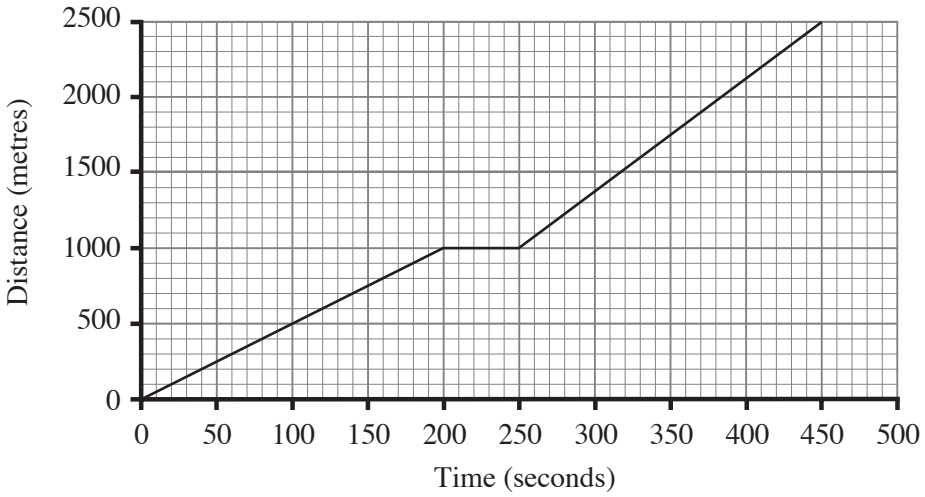
[1]

(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]

Total Question 13

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

Answer _____ [2]

Total Question 14

[Turn over

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

Jack then had 84 marbles.

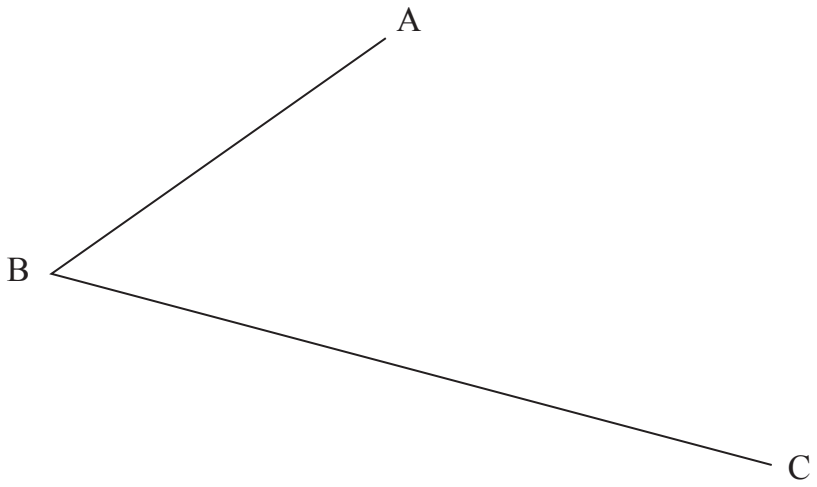
How many marbles were there in total?

Answer _____ [2]

Examiner Only	
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]

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Total Question 16

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