## General Certificate of Secondary Education

 2006Mathematics


Module M1 Paper 1
(Non-calculator)
Foundation Tier
[GMM11]
MONDAY 5 JUNE
$1.30 \mathrm{pm}-2.15 \mathrm{pm}$

## TIME

45 minutes.

## 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 ten 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.

## INEORMATION FOR CANDIDATES

The total mark for this paper is 49 .
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.

| For Examiner's <br> use only |  |
| :---: | :---: |
| Question <br> Number | Marks |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| Total <br> Marks |  |

## Formula Sheet

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


Volume of prism $=$ area of cross section $\times$ length


1 (a)


This circle is divided into 12 equal parts.
Write down, in its simplest form, the fraction of the circle which is shaded.

Answer $\qquad$
(b) Write $\frac{1}{5}$ as a percentage.

Answer $\qquad$ \% [1]
(c) Write 0.25 as a fraction.

Answer $\qquad$
(d) Circle the fractions below which are equal to $\frac{2}{3}$
$\frac{9}{12}$
$\frac{6}{9}$
$\frac{5}{6}$
$\frac{6}{8}$
$\frac{10}{15}$

2 (a) Write down the next term in the sequence
4, 11, 18, 25, ...

Answer $\qquad$
(b) (i) Continue this sequence of shapes made from matchsticks to show the fourth shape.

(ii) Complete the following table showing the number of matchsticks needed to make the first five shapes in part (b)(i).

| Number of shape | 1 | 2 | 3 | 4 | 5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Number of matchsticks | 3 | 6 | 9 |  |  |

(iii) What is the pattern in the number of matchsticks being used for each shape?

Answer

Shape 1


Shape 2
Shape 3
Shape 4
号
Shape

3 The table shows the temperature recorded at midnight for each day of a week in February.

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2^{\circ}$ | $-2^{\circ}$ | $-4^{\circ}$ | $1^{\circ}$ | $-2^{\circ}$ | $-5^{\circ}$ | $-3^{\circ}$ |

(a) Which day had the lowest midnight temperature?

Answer $\qquad$ [1]
(b) How much colder was it at midnight on Wednesday than at midnight on Monday?

Answer $\qquad$ ${ }^{\circ}$ [1]
(c) On which day was the midnight temperature 3 degrees higher than that on Tuesday?

Answer $\qquad$ [1]

4 (a) Estimate the area of the leaf shown on centimetre squared paper.


Answer $\qquad$ $\mathrm{cm}^{2}$ [2]
(b) (i) The cuboid shown is made with 1 cm cubes. What is its volume?

Answer $\qquad$ $\mathrm{cm}^{3}$ [2]
(ii) Write down the dimensions of another cuboid which would have the same volume as the one above.

Answer $\qquad$


5 (a) Calculate $\frac{420-228}{8}$

Answer $\qquad$
(b) Write down $\sqrt{81}$

> Answer
$\qquad$
(c) Calculate $\frac{2}{7}$ of 28

Answer $\qquad$
(d) Calculate $\frac{2}{5} \times \frac{3}{7}$

## Answer

$\qquad$ [1]
(e) Calculate $6^{2}$

## Answer

$\qquad$ [1]
(f) Calculate $0.2 \times 0.7$

Answer $\qquad$ [1]
(g) Write 68.59 correct to one significant figure.

Answer $\qquad$ [1]

6 Each pupil recorded how many minutes were spent completing an on-line test. The information is shown in the stem and leaf diagram.

Times for on-line test

| $\mathbf{5}$ | 2 |
| :--- | :--- |
| $\mathbf{4}$ | 89 |
| $\mathbf{3}$ | 02225 |
| $\mathbf{2}$ | 34489 |
| $\mathbf{1}$ | 29 |

(a) What was the longest time taken?

Answer $\qquad$ minutes [1]
(b) How many pupils took less than 25 minutes?

Answer $\qquad$ [1]
(c) What time was the mode?

Answer $\qquad$ minutes [1]
(d) What time was the median?

Answer $\qquad$ minutes [1]

7 The grid shows the positions of the school (S), the Leisure Centre (L), the cinema (C) and my house (H).


Scale: 1 cm represents 500 m
(a) The school is due West of my house.

Complete the sentence with the correct compass direction.
The cinema is $\qquad$ of my house.
(b) What is the bearing of the Leisure Centre from my house?

Answer $\qquad$ ${ }^{\circ}$ [1]
(c) Find the actual distance of the cinema from the Leisure Centre.

Answer

8 Solve the equations
(a) $6 x=24$

$$
\text { Answer } x=
$$

$\qquad$
(b) $x+8=15$

$$
\text { Answer } x=
$$

$\qquad$
(c) $\frac{x}{4}=7$

$$
\text { Answer } x=
$$

$\qquad$ [1]
(d) $2 x-7=11$

Answer $x=$ $\qquad$ [2]

9 The numbers of books sold by Mr Reid on different days were

$$
9, \quad 15, \quad 13, \quad 7, \quad 12, \quad 11, \quad 17, \quad 8, \quad 13, \quad 15
$$

Mrs Wright sold 81 books altogether on 7 different days.
Which of them was better at selling books? Give a reason for your answer.

Answer $\qquad$
because $\qquad$
$\qquad$


Diagram not drawn accurately

BCD is a straight line.
Calculate the size of angle
(a) $w$

Answer $\qquad$ ${ }^{\circ}$ [2]
(b) $x$

Answer $\qquad$ ${ }^{\circ}$ [1]

## General Certificate of Secondary Education

Mathematics


Module M1 Paper 2
(With calculator)
Foundation Tier
[GMM12]
MONDAY 5 JUNE

### 2.45 pm - 3.30 pm

## TIME

45 minutes.

## 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 fifteen 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 49 .
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
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| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |
| 13 |  |
| 14 |  |
| 15 |  |
| Total <br> Marks |  |

## Formula Sheet

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


Volume of prism $=$ area of cross section $\times$ length


175 people were asked which season they liked best. The first three rows of the pictogram are drawn below.
(a) 15 people liked Spring best.

Complete the key:

$\qquad$ people [1]
(b) How many people liked Summer best?

Answer $\qquad$
(c) Complete the row of the pictogram for winter.

2 Choose from

| Trapezium | Square | Rectangle |
| :--- | :--- | :---: |
| Parallelogram | Rhombus | Kite |

to complete:
(a) I have 4 equal sides, two pairs of parallel sides and no right angles.

I am a
(b) I have 2 different pairs of equal sides, no parallel sides and 1 pair of equal angles.

I am a $\qquad$ [2]

3


Write down the co-ordinates of the point A .
Answer ( $\qquad$ , $\qquad$ [1]
Answ
$\qquad$ - $[1$

4 (a) Write down all the factors of 14

Answer $\qquad$
$\begin{array}{llllllll}\text { (b) } & 5 & 7 & 12 & 15 & 16 & 20 & 27\end{array}$

From the list of numbers, write down
(i) a square number

Answer $\qquad$ [1]
(ii) a multiple of 9

Answer $\qquad$ [1]
(iii) a number with more than five factors

Answer $\qquad$ [2]

5 (a) Give a suitable metric unit for measuring the amount of paint in a large paint tin.

Answer $\qquad$ [1]
(b) Find the length of the screwdriver using the centimetre scale shown.


Answer $\qquad$ cm [2]

6 (a) Write the number twenty-seven thousand and forty-two in figures.
Answer
(b) Write 82658 correct to the nearest 100

Answer $\qquad$
(c) Write 7.34863 correct to two decimal places.

Answer $\qquad$ [1]
(d) Write down the smallest of these three numbers
0.325
0.36
0.3148

Answer $\qquad$ [1]

7

Draw a net of the chocolate box shown above.

| Answer__[1] |
| :--- |



8 Rosie wants to buy dusters which cost 85 p each.
How many can she buy with $£ 15$ ?
How much change should she get?

Answer $\qquad$ dusters, with $\qquad$ change [3]

9

2.1 cm

Find the area of this triangle.

Answer $\qquad$ $\mathrm{cm}^{2}$ [2]

10 Complete the following:

(b) $\rightarrow+\times 4 \rightarrow+31 \rightarrow+$

11 Visitor's tax costs 2.75 euro for the first day and 1.15 euro for each extra day.
(a) How much will the tax be for five days in total?

Answer $\qquad$ euro [2]
(b) The total tax paid by Lola was 13.10 euro. How long did she stay?

Answer $\qquad$ days [3]

12


Using the decision tree diagram, name the box for
(a) the word 'parallel'
(b) the word 'receive'
(c) the word 'cube'

Answer Box $\qquad$

Answer Box $\qquad$

Answer Box $\qquad$ [2]

13 Use a scale of 1 cm to 20 m to draw the triangle with sides $140 \mathrm{~m}, 160 \mathrm{~m}$ and 180 m .

Examiner Only

14 Look at the list of numbers below:

$$
\begin{array}{lllllllll}
4 & 6 & 8 & 9 & 25 & 27 & 29 & 36 & 39
\end{array}
$$

From this list, write down a number which is
(a) a cube number
(b) a prime number
(c) the cube root of 216

Answer $\qquad$ [1]

Answer $\qquad$ [1]

Answer $\qquad$ [1]

15 An engineer charged Pat $£ 138$ for 4 hours servicing and 1.5 hours repair work. The servicing cost $£ 21$ per hour. How much did repair work cost per hour?

Answer $£$ $\qquad$ [4]

