

Rewarding Learning

## General Certificate of Secondary Education

January 2012

## Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier
[GMN11]
WEDNESDAY 11 JANUARY
$9.15 \mathrm{am}-10.00 \mathrm{am}$

## 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 eleven 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 44 .
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.

| For Examiner's <br> use only |  |
| :---: | :---: |
| Question <br> Number | Marks |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| Total <br> Marks |  |

1 (a) Write down the volume of water in this measuring cylinder.


Answer $\qquad$ ml [1]
(b) Write down the speed shown by the arrow.


Answer $\qquad$ km/h
(c) Draw an arrow to show the mass of a block of wood of 1.53 kg .


2 Here is a pictogram showing the number of members who played at the local tennis club last week.

| Monday | $\bigoplus \bigoplus \ominus$ | $\bigoplus$ represents 4 members |
| :---: | :---: | :---: |
| Tuesday | $\bigoplus \bigoplus \bigoplus \bigoplus$ |  |
| Wednesday | $\bigoplus \bigoplus \square$ |  |
| Thursday | $\bigoplus \bigoplus \theta$ |  |
| Friday | $\bigoplus \bigoplus \bigoplus \bigoplus$ |  |
| Saturday |  |  |

(a) Write down the number of members who played on Wednesday.

Answer $\qquad$
(b) On which two days were there the same number of members playing?

Answer $\qquad$ and $\qquad$
(c) How many members in total played on Thursday and Friday if no member played on both days?

Answer $\qquad$
(d) On Saturday 21 members played at the club.

Show this on the pictogram.

3 (a) Write 0.4 as a percentage.

Answer $\qquad$ \% [1]
(b) Write 0.35 as a fraction.

Give your answer in its simplest form.

Answer $\qquad$
(c) Write $5 \%$ as a decimal.

Answer $\qquad$

| 4 | 5 | 6 |
| ---: | ---: | ---: |
| 8 | 9 | 10 |
| 12 | 14 | 17 |
| 21 | 25 | 35 |

From the numbers in the grid, write down:
(a) the multiples of 3,

Answer $\qquad$ [2]
(b) the factors of 48,

Answer $\qquad$ [2]
(c) the prime numbers.

Answer $\qquad$ [2]

(a) Write down the co-ordinates of the point R .
$\qquad$ , $\qquad$
(b) Plot and label the points $\mathrm{S}(-5,2)$ and $\mathrm{T}(-1,-2)$.

6 The table shows the minimum and maximum daily temperatures in six cities in January.

| City | Minimum ${ }^{\circ} \mathbf{C}$ | Maximum ${ }^{\circ} \mathbf{C}$ |
| :--- | :---: | :---: |
| Paris | -1 | 12 |
| London | -2 | 9 |
| Barcelona | 3 | 16 |
| Moscow | -15 | -1 |
| Athens | 0 | 15 |
| Glasgow | -5 | 4 |

(a) Which city recorded the lowest minimum temperature?

Answer $\qquad$
(b) What is the difference in ${ }^{\circ} \mathrm{C}$ between Glasgow's minimum and

Answer $\qquad$ ${ }^{\circ} \mathrm{C}$ [1]
(c) Which two cities had the same difference between their minimum and maximum temperatures?

Answer $\qquad$ and $\qquad$


#### Abstract

maximum temperatures?




David plays on a slide which has a ladder of vertical height 1.5 m and a sloped length of 3 m .

Using a scale of $1 \mathrm{~m}=3 \mathrm{~cm}$, construct, as a right angled triangle, a scale drawing to represent the slide.
(b) Measure the angle the sloped length makes with the ground.

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

8 (a) Calculate the size of angle $a$.


Answer $a=$
(b) A square just touches a triangle as shown.


Diagram not drawn accurately

Calculate the size of angle $b$.

$$
\text { Answer } b=
$$

$\qquad$ ${ }^{\circ}$ [2]

## Examiner Only

$\qquad$
(c) Calculate the size of angle $c$.


Diagram not drawn accurately

Answer $c=$

9 A travel agency recorded the types of holiday which were booked on a particular week.

The table below shows the results.

| Type of Holiday | Frequency | Degrees |
| :---: | :---: | :---: |
| Bed \& Breakfast | 20 |  |
| Hotel half-board | 22 |  |
| Self-catering | 6 |  |
| Camping | 12 |  |

Complete an accurate pie chart below to show this information.


10 Solve the equations
(a) $9 x-5=58$

Answer $x=$ $\qquad$
(b) $\frac{x}{8}=3$

Answer $x=$ [1]
$\qquad$

11 A group of students take class tests in both English and Mathematics.
Each test is marked out of 50 .
The stem and leaf diagrams below show the distribution of marks for both tests.

|  | English |  |  |  |  |  | Mathematics |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 |  |  |  |  |  | 0 | 9 |  |  |  |  |  |  |
| 1 | 2 | 5 | 6 | 9 |  | 1 | 0 | 1 | 2 | 6 | 7 |  |  |
| 2 | 3 | 6 | 7 | 7 | 8 | 2 | 1 | 3 | 4 | 5 | 7 | 8 | 8 |
| 3 | 0 | 2 | 4 | 5 | 5 | 3 | 2 | 5 | 7 | 9 |  |  |  |
| 4 | 1 | 2 | 2 | 3 | 6 | 4 | 1 | 4 | 8 |  |  |  |  |
| 5 | 0 |  |  |  |  | 5 |  |  |  |  |  |  |  |

Key: $2 \mid 5$ means 25
(a) Which subject has the bigger range of marks and by how much?

Answer $\qquad$ has the bigger range by $\qquad$
(b) Which subject has the bigger median mark and by how much?

Answer $\qquad$ has the bigger median mark by $\qquad$ [2]

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