CO
Rewarding Learning

## General Certificate of Secondary Education

Mathematics


Module N2 Paper 2
(With calculator)
Foundation Tier
[GMN22]
MONDAY 18 MAY

### 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 twelve 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 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 calculator, 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 |  |
| 11 |  |
| 12 |  |

## Total Marks

## Formula Sheet

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


1 The 10 boys in Class 12A gained the following marks in a test:
$18, \quad 12, \quad 15, \quad 9,13,14,20,11,10,8$

The 8 girls in Class 12A gained a total of 128 marks.
Which group did better, boys or girls? Give a reason for your answer.

Answer
because $\qquad$
$\qquad$

2 (a) Ravi has $£ 600$. He spends $\frac{1}{4}$ of this money on clothes and $\frac{1}{6}$ of the money on his holiday. What fraction of the $£ 600$ has he left?

Answer $\qquad$
(b) Which of the following fractions is nearest to $\frac{1}{4}$ ?

$$
\frac{2}{10}, \quad \frac{3}{20}, \quad \frac{7}{30}, \quad \frac{11}{40}
$$

Show clearly how you decided on your answer.
$\qquad$
(a)

B

$\times$

T is a point at the centre of a town square.
A bank, $B$, is marked on the diagram above.
(i) Find the bearing of B from T .

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

The scale of the diagram is $1 \mathrm{~cm}=20 \mathrm{~m}$.
The cinema C is 90 m from T and on a bearing of $160^{\circ}$ from T .
(ii) Mark the position of the cinema, C , on the diagram above.
(b)


ABC is an isosceles triangle. ABD and CBE are straight lines.
Angle ABC is $80^{\circ}$
Find the size of
(i) angle EBD,
$\qquad$
(ii) angle BAC.

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

4 Katy wants to know how many times a month, on average, the people in her town go to the cinema. She asks 200 pupils in her school.

Explain why Katy's sample may not be representative of the people in her town.

Answer $\qquad$
$\qquad$

5 (a) Solve the equation $\frac{y}{3}=6$

Answer $y=$ $\qquad$
(b) Expand and simplify $4(2 a+3)-7$

Answer $\qquad$ [2]

6 The heights (in centimetres) of twenty boys in a local hockey club are:

$$
\begin{array}{llllllllll}
181 & 170 & 162 & 153 & 182 & 171 & 163 & 158 & 185 & 174 \\
166 & 157 & 177 & 167 & 178 & 167 & 178 & 167 & 169 & 168
\end{array}
$$

Construct a stem and leaf diagram to illustrate these heights.

7 Construct a rhombus of side 6.5 cm which has one of its diagonals 5 cm in length.

8 A wardrobe was priced at $£ 640$
In a sale its price was reduced by $35 \%$. Calculate the sale price of the wardrobe.

9 Calculate the length of BC in the right angled triangle below.


Answer $\qquad$ cm [3]

10 A man is filling his garden pond with water. He can fill a bucket of water and empty it into the pond every 25 seconds.

The bucket holds 15 litres of water.
It takes the man 4 minutes and 35 seconds to fill the pond.
What volume of water does the pond hold?

Answer $\qquad$ [4]
$11 £ 2500$ is placed in a bank account and gains $4 \%$ compound interest per year.
What should be the total amount in the account at the end of 3 years?

## Answer £

12 Use trial and improvement to solve

$$
x^{3}-2 x=41
$$

giving the answer correct to 1 decimal place. Show your working.
$\qquad$ [4]

