

Rewarding Learning

## General Certificate of Secondary Education

2011

## Mathematics



## Module N2 Paper 2 <br> (With calculator) <br> Foundation Tier

[GMN22]
TUESDAY 31 MAY
$10.30 \mathrm{am}-11.15 \mathrm{am}$

## 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 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.

6388

| For Examiner's <br> use only |  |
| :---: | :---: |
| Question <br> Number | Marks |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |
| Total <br> Marks |  |

## Formula Sheet

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


1 The number of buns sold in a bakery was recorded as follows.

| Cream | 16 |
| :--- | :---: |
| Fruit | 10 |
| Jam | 9 |
| Chocolate | 25 |

Draw a pie chart to illustrate this information.


2 (a) A rectangular carton holds apple juice. The base of the carton has dimensions of 6 cm and 11 cm . The height of the juice in the carton is 10.5 cm above the base. $\left(1 \mathrm{~cm}^{3}=1 \mathrm{ml}\right)$.

What is the volume of juice left in the carton in millilitres?


Answer $\qquad$ ml [2]
(b) John pours himself a glass of juice. The volume in the carton is now 412.5 ml .

What is the height of the juice above the base now?

Answer $\qquad$ [3]
(a) Calculate
(i) the cube root of 64

Answer $\qquad$
(ii) $3.3^{2}+6^{3}$

## Answer

$\qquad$
(b) Write 23.35 correct to three significant figures.

Answer $\qquad$ [1]

4 Andrew earns $£ 900$ a month. He spends $\frac{1}{4}$ of this money on rent and $\frac{1}{5}$ on computer games. What fraction of the $£ 900$ has he left?

Answer $\qquad$ [4]

5 An adult ticket for a show costs $£ a$.
A child ticket costs $£ 4$ less than an adult ticket.
(a) Write down an expression, in terms of $a$, for the cost of a child ticket.

Answer $£$
(b) Daisy buys two adult tickets and three child tickets. The total cost is $£ 23$.
(i) Use this information to write down an equation in terms of $a$.

Answer
(ii) Solve your equation to find the cost of an adult ticket.

Answer $£$ $\qquad$

6 The increase in test scores of 100 children over a period of time was recorded.

| Increase in test <br> scores $(w)$ | $0<w \leq 5$ | $5<w \leq 10$ | $10<w \leq 15$ | $15<w \leq 20$ | $20<w \leq 25$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Frequency | 16 | 36 | 22 | 14 | 12 |

Show this information on a grouped frequency diagram.


7
(a)


A ten pence piece has a radius of 1.4 cm .
Calculate the circumference of this coin.
© The Royal Mint

Answer $\qquad$ cm [2]

Explain why the sum of the interior angles in
a regular pentagon is $540^{\circ}$.
$\qquad$
$\qquad$
$\qquad$
$\qquad$

8 A new bicycle is priced at $£ 240$
In a sale it is reduced by $35 \%$.
Calculate the sale price.

Answer $£$ $\qquad$
(b)


9 A ramp is placed next to a step to allow wheelchair access.
The ramp is 16 cm high and reaches 85 cm from the step.
Calculate the sloping length, $r \mathrm{~cm}$, of the ramp to the edge of the step.


Answer $\qquad$ cm [3]

10 (a) At birth a baby boy weighed 4 kg . Six weeks later he weighed 7 kg .
What was the percentage increase in his weight?

Answer $\qquad$ \% [2]
(b) Colin leaves $£ 4800$ in the bank for two years.

It earns compound interest of 3\% per year.
Calculate the total amount Colin has in the bank at the end of the two years.
$\qquad$

11 One solution of $x^{2}+4 x=50$ lies between 5 and 6

Use the method of trial and improvement to find this solution correct to one decimal place.

Show all your working.

Answer $x=$


Starting with $a=2, b=9, c=10$ use the flow chart to find the values printed.

| $a$ | $b$ | $c$ | S | T |
| :---: | :---: | :---: | :---: | :---: |
| 2 | 9 | 10 |  |  |
|  |  |  |  |  |

Answer $a=$ $\qquad$ , $b=$ $\qquad$ , $c=$ $\qquad$ [3]

## THIS IS THE END OF THE QUESTION PAPER

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