

SHILDEN BOUNTY COM

**General Certificate of Secondary Education** January 2011

#### **Mathematics**



Module N2 Paper 1 (Non-calculator) **Foundation Tier** 

[GMN21]

**TUESDAY 11 JANUARY**  $9.15 \, \text{am} - 10.00 \, \text{am}$ 



### 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. The Formula Sheet is on page 2.

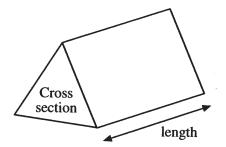
For Examiner's use only		
Question Number	Marks	
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Total	
Marks	

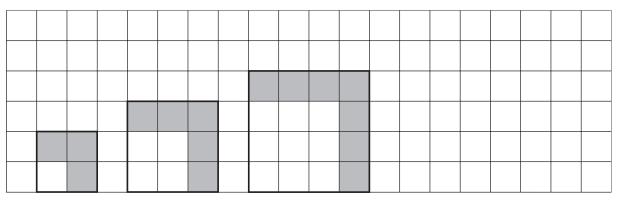


# **Formula Sheet**

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



1 A sequence of patterns is drawn below.



$$2^2 - 1^2$$

$$3^2 - 2^2$$

$$4^2 - 3^2$$

(a) Draw the pattern for  $5^2 - 4^2$ 

[1]

11

**Examiner Only** 

**(b)** Fill in the blanks in the table

$$2^2 - 1^2 = 4 - 1 = 3$$

$$3^2 - 2^2 = 9 - 4 = 5$$

$$4^2 - 3^2 = 16 - 9 = 7$$

$$5^2 - 4^2 = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

[1]

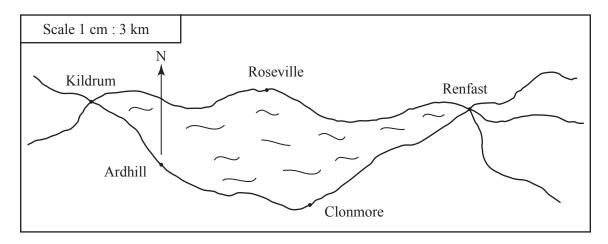
(c) Use the pattern in your table to find easily the answer to

$$500^2 - 499^2$$

Answer \_\_\_\_\_ [1]



2 The map shows the position of five towns around a lake.



(a) Use the map to measure the bearing of Roseville from Ardhill.

Answer ° [1]

**(b)** Use the map and scale to find the direct distance across the lake between Kildrum and Clonmore.

Answer \_\_\_\_\_ km [3]

- 3 Work out
  - (a)  $5^3$

Answer \_\_\_\_\_ [1]

Examiner Only

**(b)** 4.2 – 1.66

Answer \_\_\_\_\_ [1]

(c)  $0.3 \times 0.3$ 

Answer \_\_\_\_\_ [1]

(d) the cube root of 64

Answer \_\_\_\_\_ [1]

(e)  $\frac{3}{4} - \frac{5}{12}$ 

Answer \_\_\_\_\_ [2]

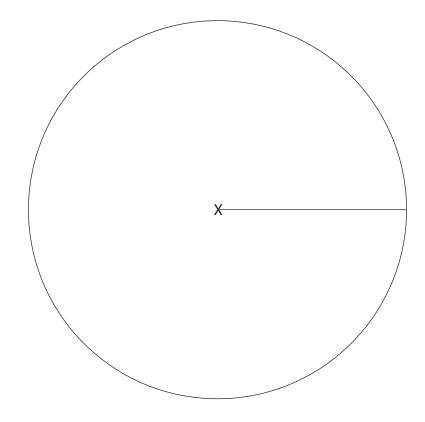
4 The colours of the cars passing the school gates were noted during a school day.

Colour	Red	Blue	Black	Green	Silver	Other
Number of cars	6	12	2	10	8	2

Examiner Only

Marks Remark

Draw a clearly labelled pie chart for this data.



[4]

VWXYZ is a regular pentagon.

	V
Z	$\bigvee$ W
Y	X

Diagram not drawn accurately

Calculate angle *p*.

Show your working.

Answer \_\_\_\_\_ ° [3]

A baker uses  $\frac{3}{5}$  of a bag of flour to make 6 muffins.

How many bags of flour will he need to make 48 muffins?

Answer \_\_\_\_\_ bags [3]

**Examiner Only** 

7 The school bus for Oldtown Secondary School carried a mixture of boys and girls. Some of the students were wearing scarves.

(a) Design a table in the space below which could be used to record the numbers of boys and girls and the numbers of each wearing scarves and not wearing scarves.

[3]

- **(b)** There were 40 students on the bus. Show how they might have been recorded in your table above. [1]
- 8 (a) Solve 18 3x = 2 + 5x

Answer \_\_\_\_\_ [3]

**(b)** Solve  $\frac{21-2x}{3} = 5$ 

Answer [3]

9 The heights of trees in an orchard were recorded. The heights were grouped as shown in the table.

Examiner Only		
Marks	Remark	

Height h (metres)	Frequency	Mid Point	
$0 < h \leq 2$	12	1	
$2 < h \le 4$	8	3	
4 < <b>h</b> ≤ 6	12		
6 < <b>h</b> ≤ 8	10		
8 < <b>h</b> ≤ 10	7		
10 < <b>h</b> ≤ 12	1		

(a) Which class interval contains the median height?

Answer \_\_\_\_\_ [1]

**(b)** Complete the table and hence find an estimate for the mean height of the trees.

Answer \_\_\_\_\_ m [3]

10 (a) Convert  $0.6 \,\mathrm{m}^3$  into  $\mathrm{cm}^3$ 

Answer cm<sup>3</sup> [2<sup>-</sup>

**(b)** P is the point (8, -1) and Q is the point (-2, 3)

Find the co-ordinates of the midpoint of the line PQ.

Answer ( \_\_\_\_\_ , \_\_\_\_ ) [2]

11	Work out	$5\frac{3}{4}-2\frac{3}{4}$	5

Examiner Only

Marks Remark

Give your answer as a mixed number.

Answer \_\_\_\_\_ [3]

## THIS IS THE END OF THE QUESTION PAPER



Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA will be happy to rectify any omissions of acknowledgement in future if notified.