

Ce	Centre Number				
71					

Candidate Number

General Certificate of Secondary Education January 2012

Mathematics



Module N2 Paper 2 (With calculator)
Foundation Tier

[GMN22]

WEDNESDAY 11 JANUARY 10.30 am – 11.15 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.

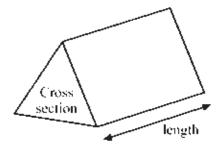
For Examiner's use only				
Question Number	Marks			
1				
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12				

Total	
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Formula Sheet

Volume of prism = area of cross section \times length



2

The volumes of this cube and this cuboid are the same.	Examiner Only Marks Remark
What is the missing length marked ℓ on the cuboid?	
6cm 4cm 6cm	
Answer [3]	
Each student in Year 10 studies one language (French, Spanish or German). There are 135 students in Year 10. Two-fifths study French, one-third study Spanish and the rest study German. How many students study German? Answer [4]	
	What is the missing length marked ℓ on the cuboid? Answer [3] Each student in Year 10 studies one language (French, Spanish or German). There are 135 students in Year 10. Two-fifths study French, one-third study Spanish and the rest study German. How many students study German?

3	In the spaces	provided,	write down	the next tw	vo numbers i	n the sequence

Examiner Only				
Marks	Remark			

4 120 Year 13 students each study one science.

The table below shows some information about these students.

	Biology	Chemistry	Physics	Total
Female	27			68
Male			29	
Total		31	48	120

Complete the table.

[2]

[2]

5 (a) Which of the following fractions is nearest in size to $\frac{3}{5}$?

Examiner Only

Marks Remark

Show your working.

$$\frac{7}{10}$$
 $\frac{11}{20}$ $\frac{17}{30}$ $\frac{1}{2}$

Answer _____ [2]

(b) Calculate

(i)
$$\frac{1}{2.5^2}$$

Give your answer as a decimal.

Answer _____ [2]

(ii)
$$\frac{6.5 \times 5.8}{5.3 + 2.1}$$

Give your answer correct to 2 decimal places.

Answer _____ [2]

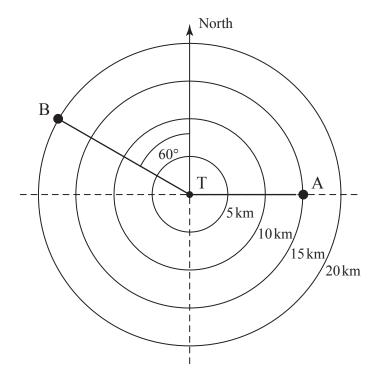
(iii)
$$\sqrt{5.62^3 - 3.4^2}$$

Give your answer correct to 3 significant figures.

Answer _____ [2]

A radar screen shows the position of mountain rescue teams at the centre T and two climbers who need help at positions A and B.

Examiner Only				
Marks	Remark			



Complete the following sentences:

(a) To help climber A a rescue team must travel

_____km on a bearing of ______°.

[1]

(b) To help climber B a second rescue team must travel

km on a bearing of °.

[1]

(c) Another climber C needs help at a distance of 12.5 km from T on a bearing of 210°. Mark the position of climber C on the diagram. [2]

7 Work out the value of *x* in the quadrilateral below.

0
/

Diagram not drawn accurately

Examiner Only

Answer $x =$	۰	[4]

8 In April last year, it rained on 24 days.

What percentage of days in April were dry?

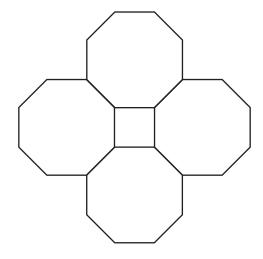
Answer ______% [2]

9 ((a)	Calculate	the size	of the	interior	angle	of a	regular	octagon.
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Examin	er Only
Marks	Remark

Answer	0	[2]
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(b) Four floor tiles, each in the shape of a regular octagon are placed together as shown. Explain why the shape between them must be a square.



Answer	•	
		[2

BLANK PAGE

(Questions continue overleaf)

Number of pages	Frequency
$0 < P \le 3$	10
3 < P ≤ 6	19
6 < P ≤ 9	23
9 < P ≤ 12	32
12 < P ≤ 15	10
15 < P ≤ 18	6

(a)	What	is	the	modal	class
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(b) Which class interval contains the median?

(c) On the grid below draw a frequency polygon to illustrate the data opposite.

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[2]

11 ((a)	Find the n	nidpoint	of the	line	joining	the	points ((-5,	(6)) and ((3,	-6°).

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Answer	1	1

1	(h)	Calculate the len	oth of the line.	ioining the no	pints $(-2, -2)$) and (3	10)
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12 The mean test score for a class of 20 pupils was 15.

Some scores are shown below.

Score	Frequency	
18	4	
16	11	
12	3	
7, 3	2	

Calculate the missing score.

Answer	3	I
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