Rewarding Learning

71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics

Module N2 Paper 2
(With calculator)
Foundation Tier

[GMN22]

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.

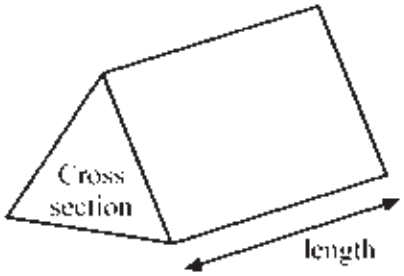
INFORMATION FOR CANDIDATES

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	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
Total Marks	

Formula Sheet

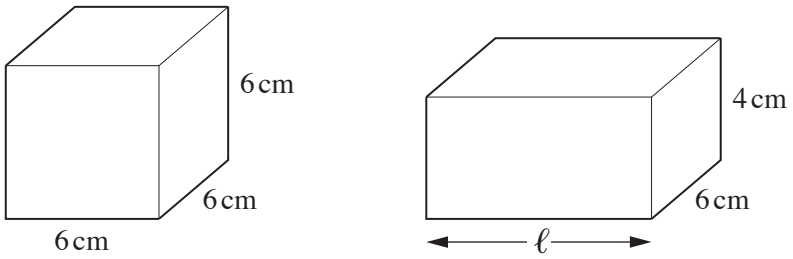
Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

1 The volumes of this cube and this cuboid are the same.

What is the missing length marked ℓ on the cuboid?



Answer _____ [3]

2 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]

Examiner Only	
Marks	Remark

3 In the spaces provided, write down the next two numbers in the sequence

18, 17, 14, 9, _____, _____ [2]

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]

Examiner Only	
Marks	Remark

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

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]

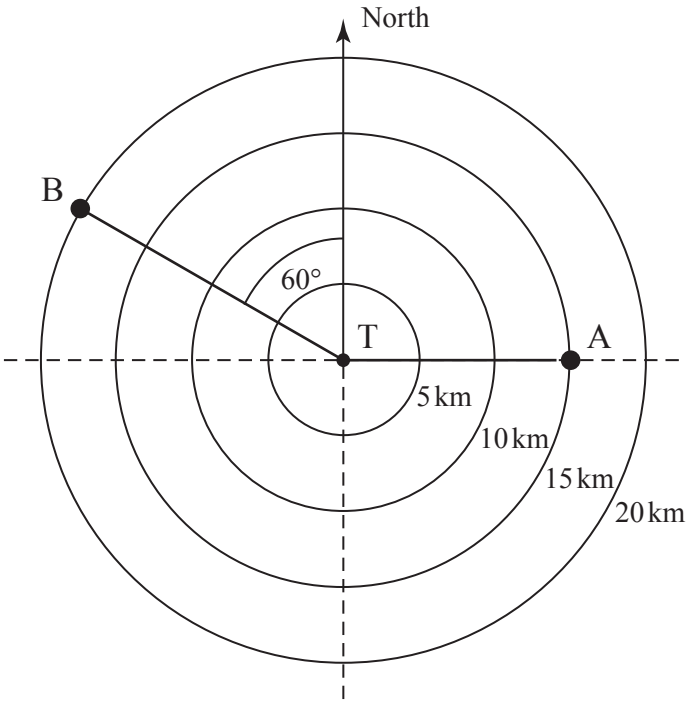
(iii) $\sqrt{5.62^3 - 3.4^2}$

Give your answer correct to 3 significant figures.

Answer _____ [2]

Examiner Only	
Marks	Remark

6 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.



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.

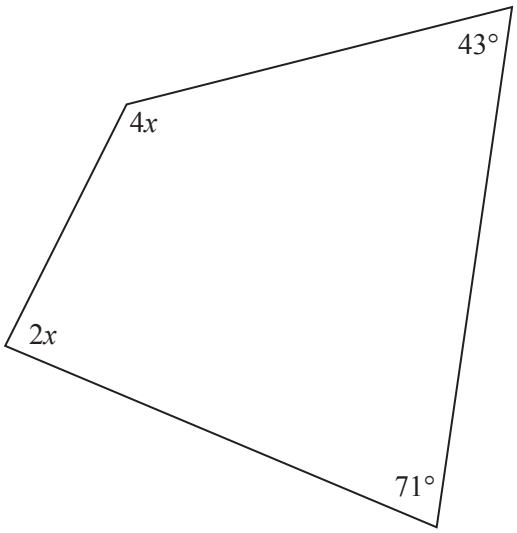


Diagram not drawn accurately

Answer x = _____° [4]

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

What percentage of days in April were dry?

Answer _____% [2]

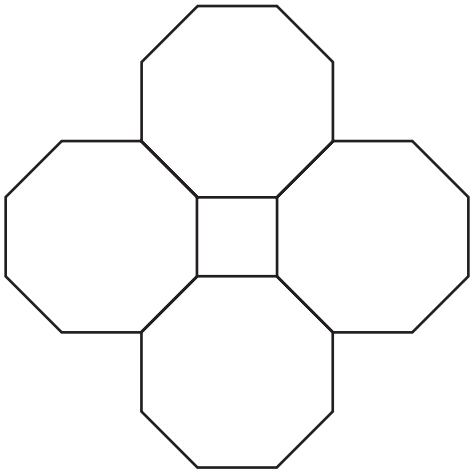
Examiner Only

Marks	Remark

9 **(a)** Calculate the size of the interior angle of a regular octagon.

Answer _____° [2]

(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]

Examiner Only	
Marks	Remark

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(Questions continue overleaf)

10 The table shows information about the number of pages (P) that 100 children printed from a computer last week.

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

(a) What is the modal class?

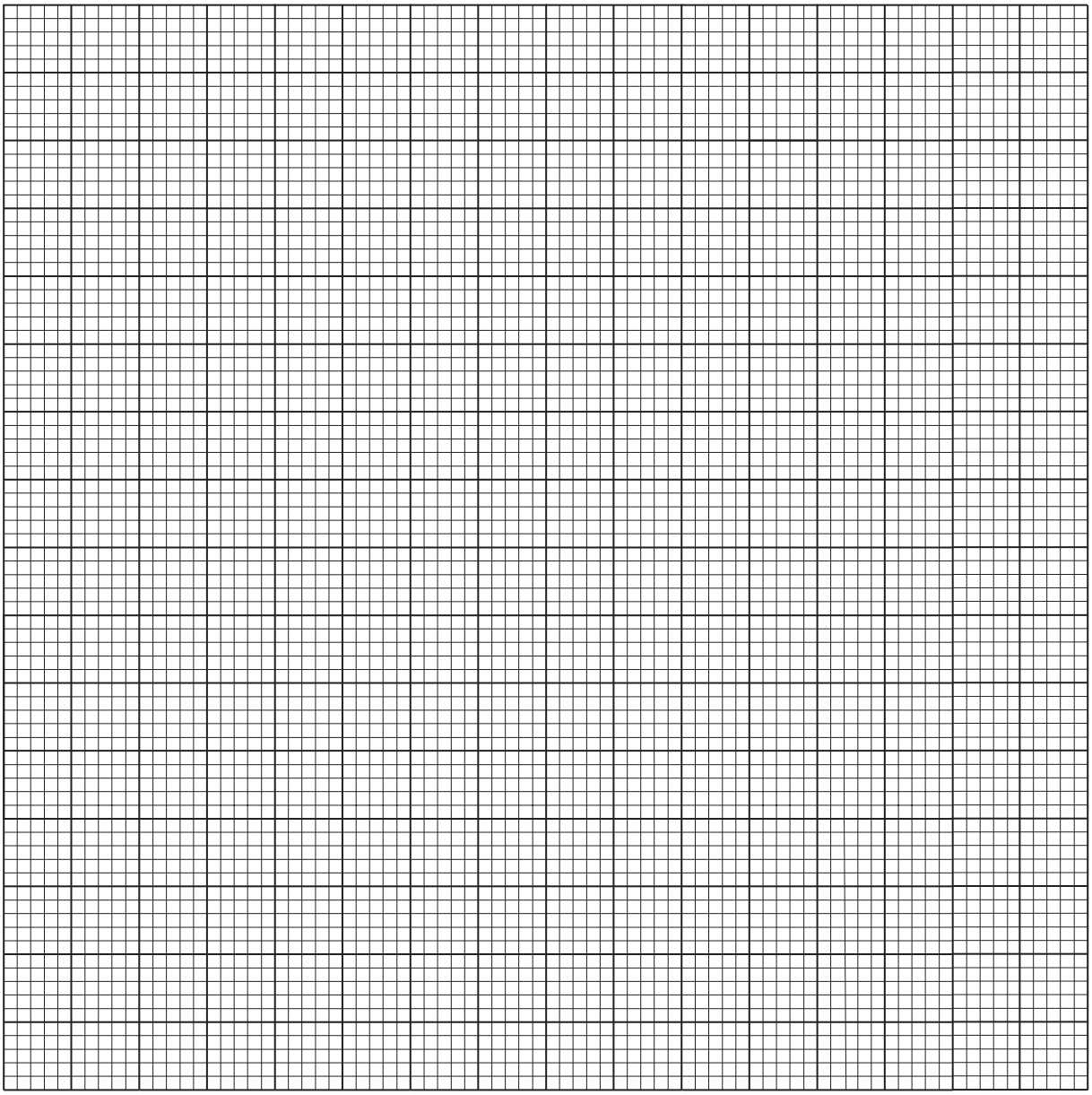
Answer _____ [1]

(b) Which class interval contains the median?

Answer _____ [1]

Examiner Only	
Marks	Remark

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



[2]

Examiner Only	
Marks	Remark

11 **(a)** Find the midpoint of the line joining the points $(-5, 6)$ and $(3, -6)$.

Answer _____ [1]

(b) Calculate the length of the line joining the points $(-2, -2)$ and $(3, 10)$.

Answer _____ [3]

Examiner Only	
Marks	Remark

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	
	2	

Calculate the missing score.

Answer _____ [3]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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