Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
2011

Mathematics

Module N2 Paper 1
(Non-calculator)
Foundation Tier

[GMN21]

TUESDAY 31 MAY

9.15 am–10.00 am

GMN21

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 thirteen** 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.

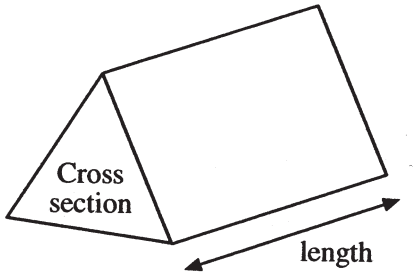
INFORMATION FOR CANDIDATES

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	
12	
13	
Total Marks	

Formula Sheet

Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

1 The stem and leaf diagram shows the weights of bags of onions.

3	5 7 8 9
4	2 5 6 8 9 9
5	1 3 4

Key 3 | 5 = 3.5 kg

Write down

(a) the range,

Answer _____ kg [1]

(b) the median.

Answer _____ kg [1]

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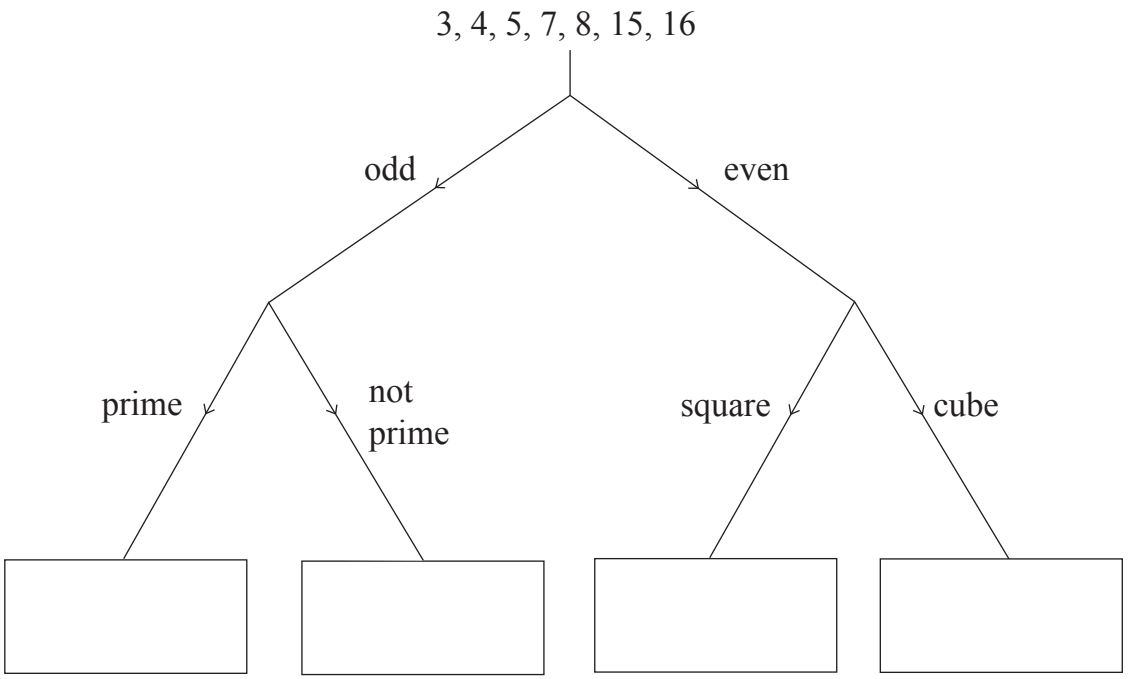
2 Using the decision tree diagram, sort these numbers into the correct boxes.



[2]

3 Calculate

Examiner Only	
Marks	Remark

(a) 0.6×0.4

Answer _____ [1]

(b) $\frac{5}{6} - \frac{1}{2}$

Answer _____ [2]

(c) $7.3 - 3.86$

Answer _____ [1]

(d) $\frac{3}{4} \times \frac{2}{5}$ giving your answer in its simplest form.

Answer _____ [2]

Examiner Only	
Marks	Remark

4 Solve

(a) $\frac{p}{6} = 3$

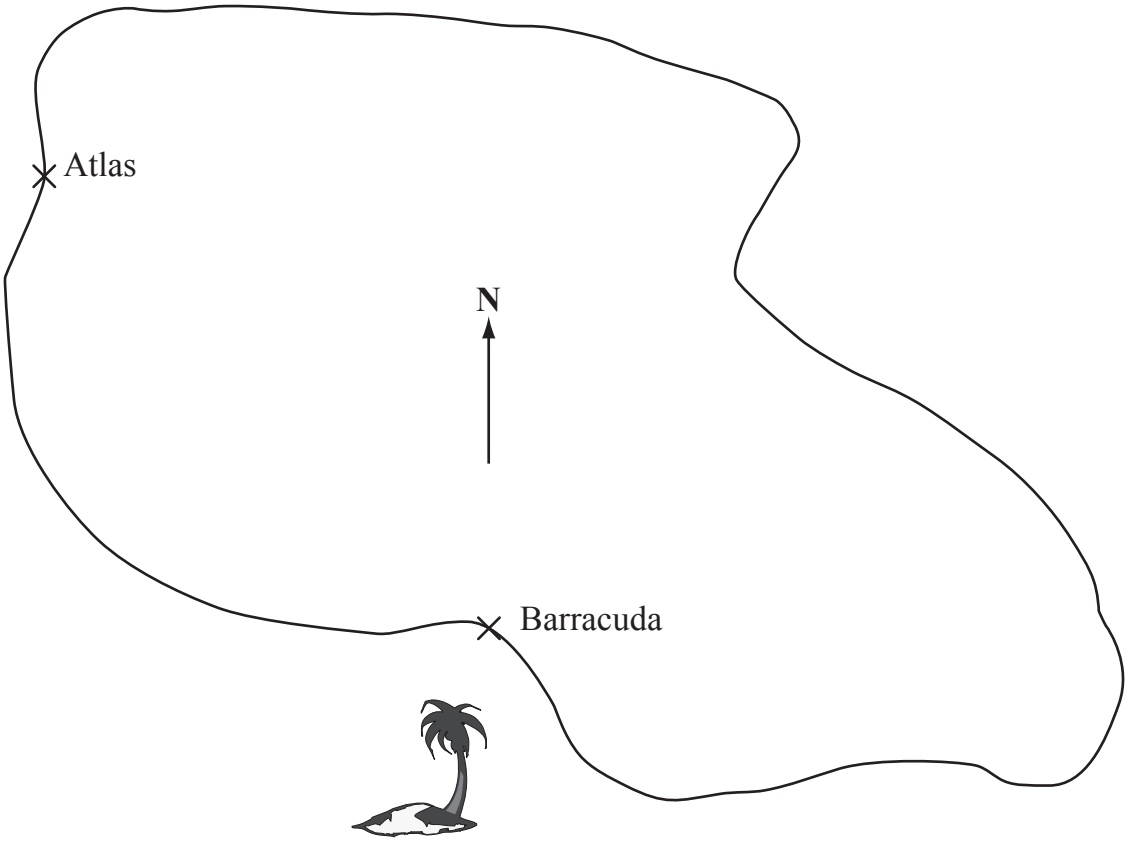
Answer $p =$ _____ [1]

(b) $3t - 7 = 5$

Answer $t =$ _____ [2]

5 An outline map of Tanua Island is shown.

The Atlas and the Barracuda are two hotels on this island.



Scale: 1 cm to 5 km

(a) Use the diagram to calculate the actual distance of the Atlas from the Barracuda.

Answer _____ km [2]

(b) A new hotel, the Capri, is being built 25 km from the hotel Atlas on a bearing of 110°. Mark the correct position of this new hotel. [2]

Examiner Only	
Marks	Remark

6 The Ross family eat $\frac{3}{5}$ of a loaf of bread each day.

What is the least number of loaves they will need to buy for 9 days?

Answer _____ [3]

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7 Lines AB, CD and EF are parallel.

Angles of 96° and 60° are marked in the diagram as shown.

Calculate the size of the angles marked x, y and z.

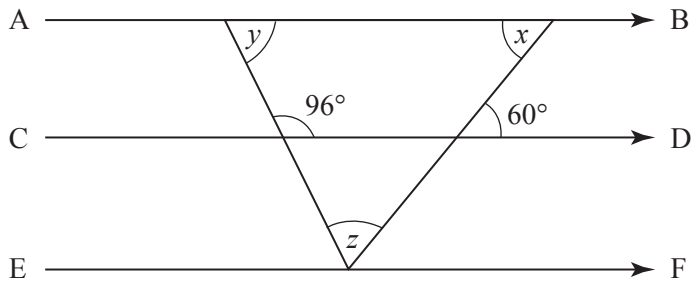


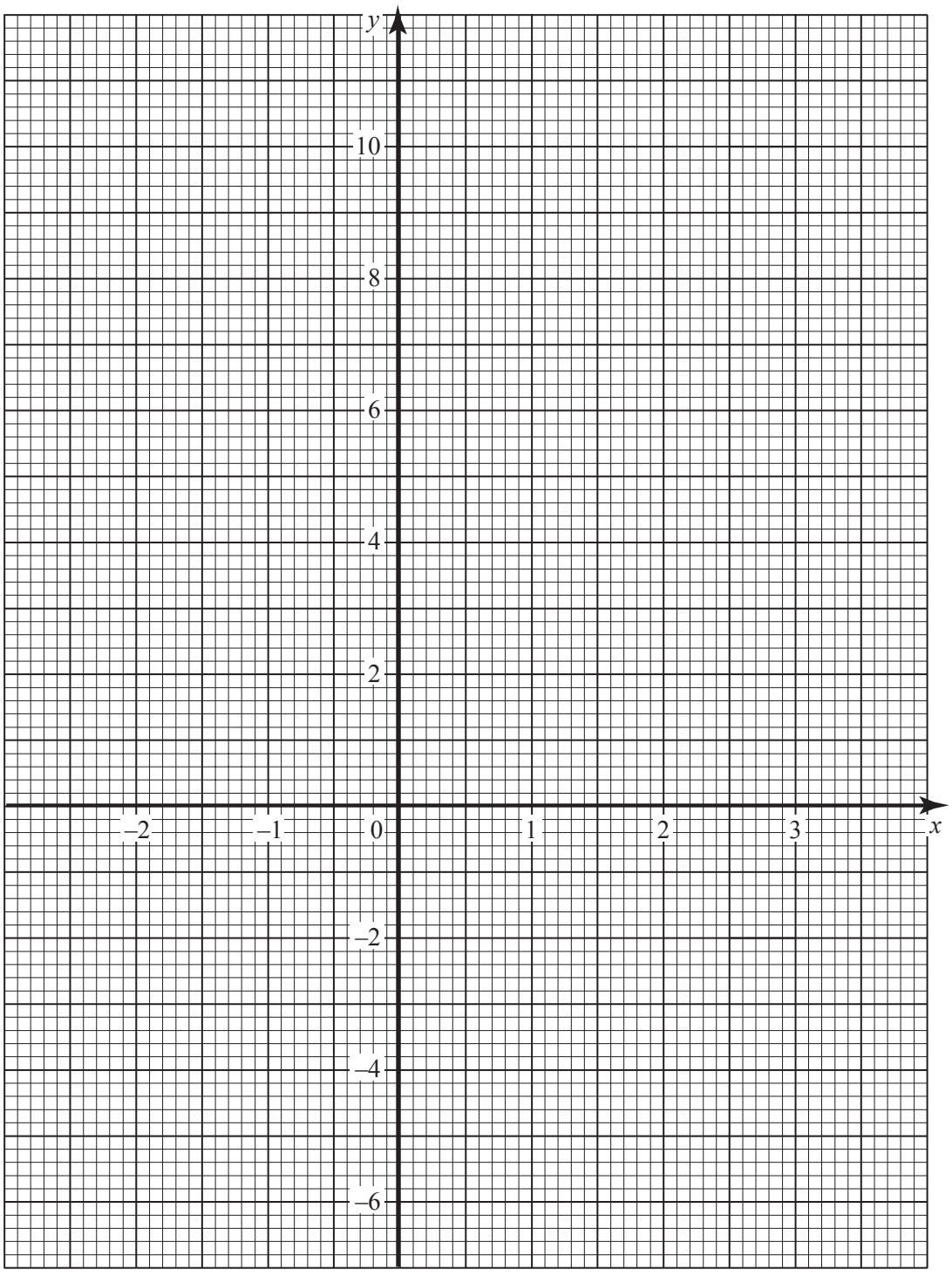
Diagram not drawn accurately

Answer Angle x = _____° [1]

Angle y = _____° [1]

Angle z = _____° [1]

8 Draw the graph of $y = 4 - 3x$ on the graph paper below.

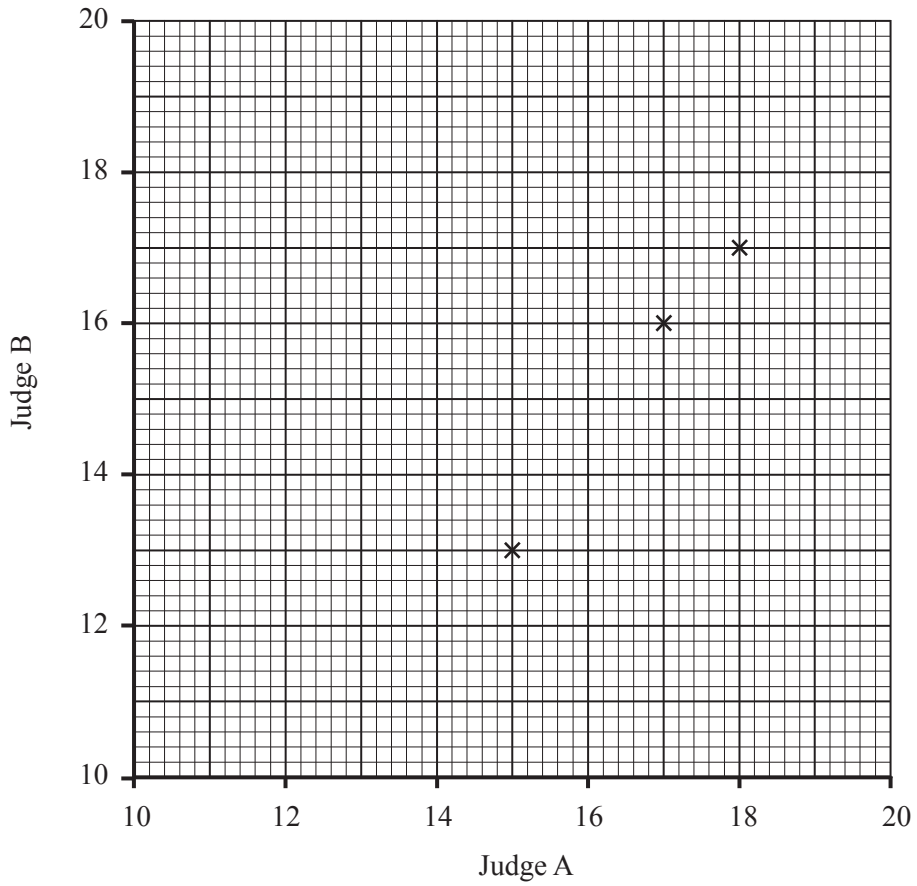


[3]

Examiner Only	
Marks	Remark

9 The table shows the marks awarded by two judges to the first eight competitors in a gymnastics competition.

Judge A	**18**	**15**	**17**	13	19	15	12	18
Judge B	**17**	**13**	**16**	13	18	16	14	16



(a) The first three points have already been plotted.

Use the data to complete the scatter graph. [2]

(b) Draw the line of best fit. [1]

(c) Another competitor was awarded 14 marks by Judge A.

Estimate the marks awarded to this competitor by Judge B.

Answer _____ [1]

(d) What type of correlation does your graph show?

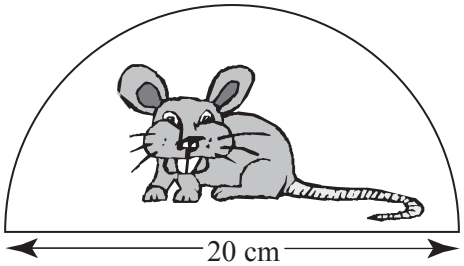
Answer _____ [1]

Examiner Only

Marks	Remark

Examiner Only	
Marks	Remark

10 **(a)** A computer mouse mat is semi-circular in shape. It has a diameter of 20 cm. Taking $\pi = 3.142$, calculate the area of the mat.



Answer _____ cm^2 [2]

(b) Find the midpoint of the line joining the points A (–1, 6) and B (3, –2).

Answer (_____ , _____) [2]

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11 Write 84 as a product of prime factors. Express your answer in index notation.

Answer _____ [3]

Examiner Only	
Marks	Remark

12 Expand and simplify

$$(x - 6)(x + 4)$$

Answer _____ [2]

13 The times that 100 students spent watching TV during one weekend were recorded. The times were grouped as shown in the table.

Time t (hours)	Frequency		
$0 < t \leq 2$	4		
$2 < t \leq 4$	18		
$4 < t \leq 6$	32		
$6 < t \leq 8$	20		
$8 < t \leq 10$	16		
$10 < t \leq 12$	10		

Calculate an estimate for the mean time.

Answer _____ hours [4]

THIS IS THE END OF THE QUESTION PAPER