



General Certificate of Secondary Education
January 2010

Centre Number

71

Candidate Number

Mathematics



Module N1 Paper 1
(**Non-calculator**)
Foundation Tier
[GMN11]



TUESDAY 12 JANUARY
9.15 am – 10.00 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 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.

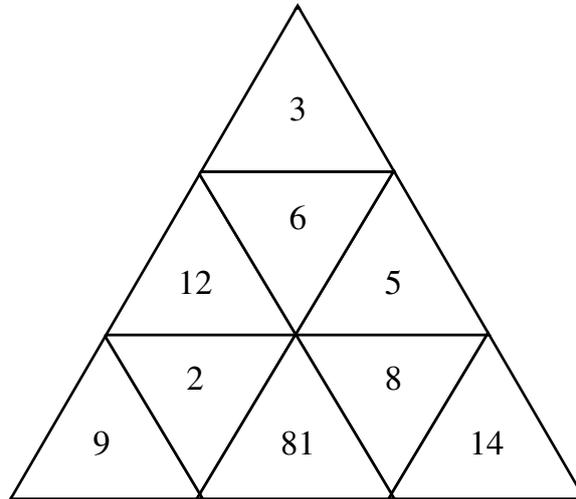
You should have a ruler, compasses, set-square and protractor.

For Examiner's
use only

Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	

**Total
Marks**

1



Using the numbers in the grid, write down:

(a) two numbers with a product of 15

Answer _____ and _____ [1]

(b) two factors of 16

Answer _____ and _____ [1]

(c) a multiple of 7

Answer _____ [1]

(d) the number which is a square root of 9

Answer _____ [1]

Examiner Only	
Marks	Remark

- 2 A hotel has bedrooms on floors 4 to 8
The sign shows the room numbers on each floor.

Floor	Rooms
8	801–818
7	701–730
6	601–646
5	501–546
4	401–464
3	Conference rooms
2	Reception
1	Basement

- (a) How many rooms are there on floor 6?

Answer _____ [1]

- (b) What is the total number of bedrooms?

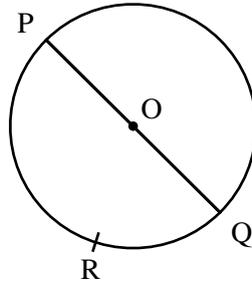
Answer _____ [2]

- (c) Which of the floors 4 to 8 has least bedrooms? Suggest why this might be so.

Floor _____ Because _____
_____ [1]

Examiner Only	
Marks	Remark

4



P, Q and R are points on a circle. The point O is the centre of the circle.

(a) **Radius Diameter Chord Arc Circumference**

Choose from the words above to describe

(i) the line PQ,

Answer _____ [1]

(ii) the curved line QR.

Answer _____ [1]

(b) Draw a line through the point O, perpendicular to PQ. [1]

(c) Mark a point S on the circumference of the circle. [1]

5



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At midnight the temperature in a desert was -18°C
By midday it had risen to 38°C .

(a) By how many degrees had the temperature risen in these 12 hours?

Answer _____ $^{\circ}\text{C}$ [1]

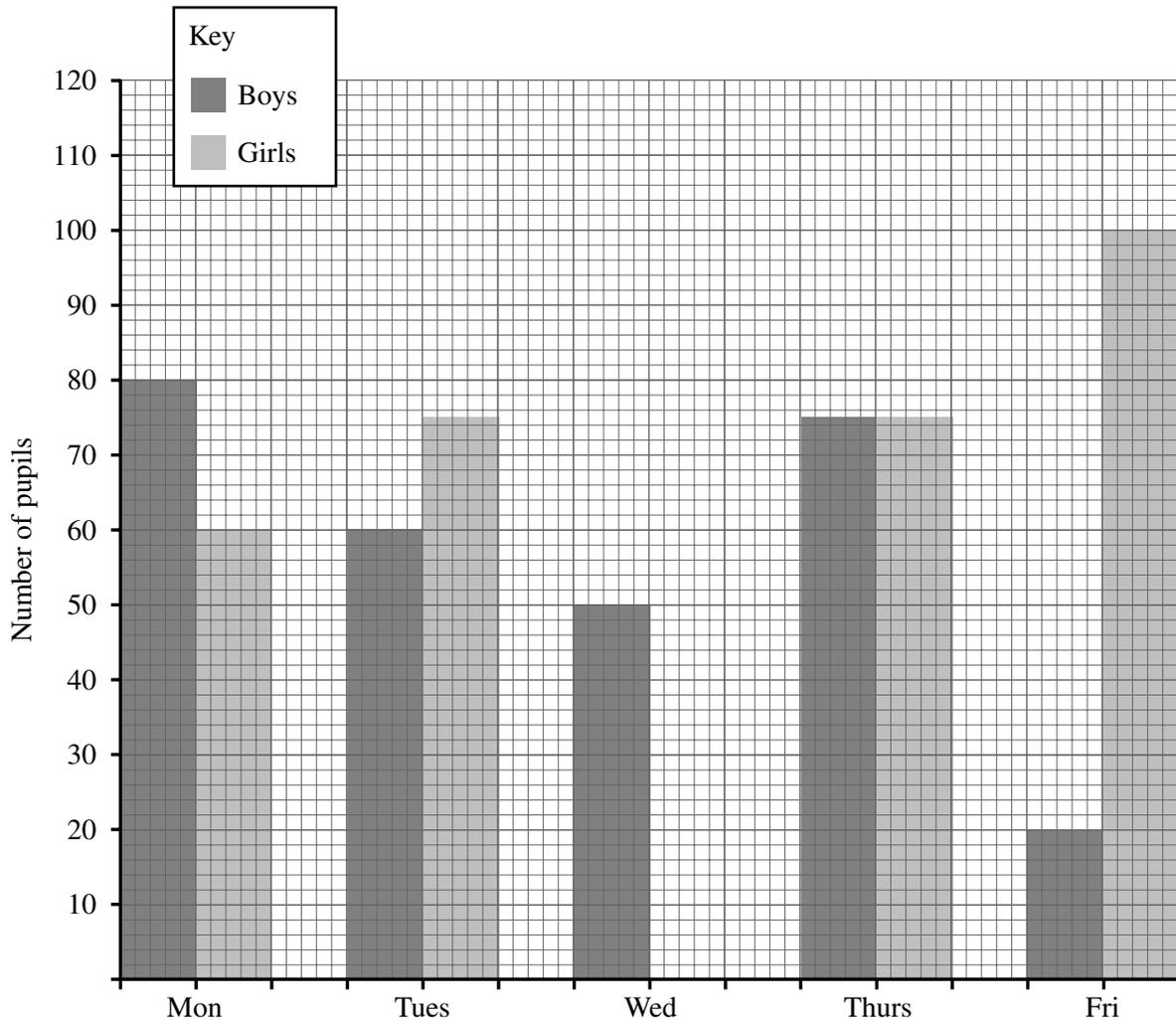
(b) In the next 12 hours, the temperature fell by 59°C . What was the temperature then?

Answer _____ $^{\circ}\text{C}$ [1]

Examiner Only

Marks Remark

6 The bar chart shows the number of pupils using a school canteen during one week.



(a) On Wednesday, 15 more girls than boys used the canteen. Complete the diagram to show this information. [1]

(b) On which day did most pupils use the canteen?
 Answer _____ [1]

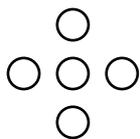
(c) The canteen manager states:
 "Exactly 20% of those who used the canteen on Friday were boys."
 Is this true? Explain your answer.
 Answer _____ because _____
 _____ [2]

Examiner Only	
Marks	Remark

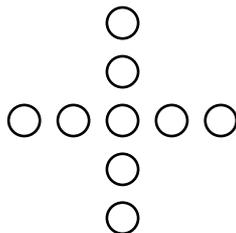
7 Here is a sequence of patterns made using counters.



Pattern 1



Pattern 2



Pattern 3

Pattern 4

(a) Draw Pattern 4 above. [1]

(b) Complete the table below for the number of counters in patterns 4 and 5

	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5
Number of counters	1	5	9		

[1]

(c) Describe in words the rule for continuing the sequence of the number of counters.

Rule _____ [1]

Examiner Only

Marks Remark

8 (a) Calculate the size of angle x in the diagram.

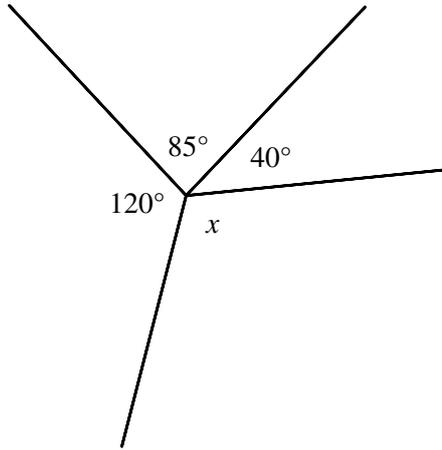
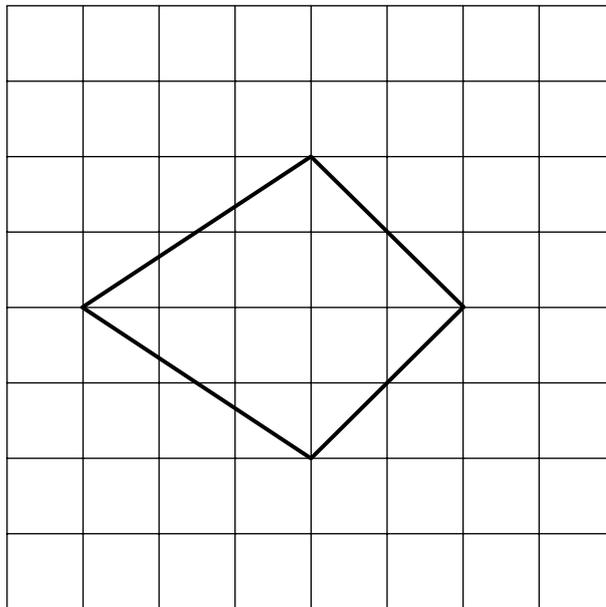


Diagram not drawn accurately

Answer _____° [2]

(b) Find the area of the shape on the 1 cm grid.



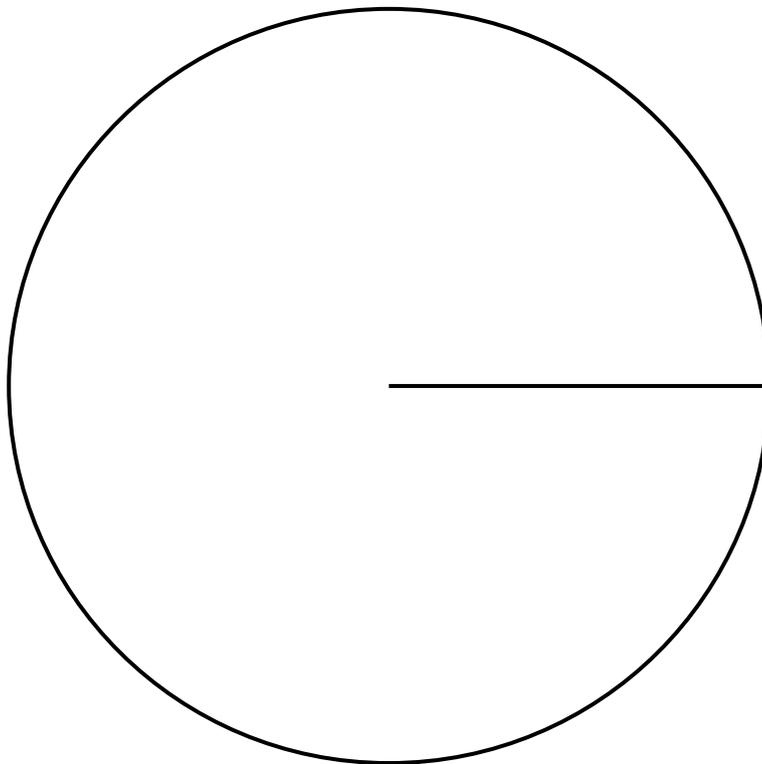
Answer _____ [2]

Examiner Only	
Marks	Remark

- 11** Year 10 pupils were asked the name of their mobile phone company. The results for the 120 pupils are shown in the table below.

Phone company	Number of pupils
In-tune	16
4-phones	48
Aweb	20
U Text	12
Other	24

Draw a pie chart to show the information in the table.



[4]

- 12 (a)** Write down the next two prime numbers after 19

Answer _____ and _____ [2]

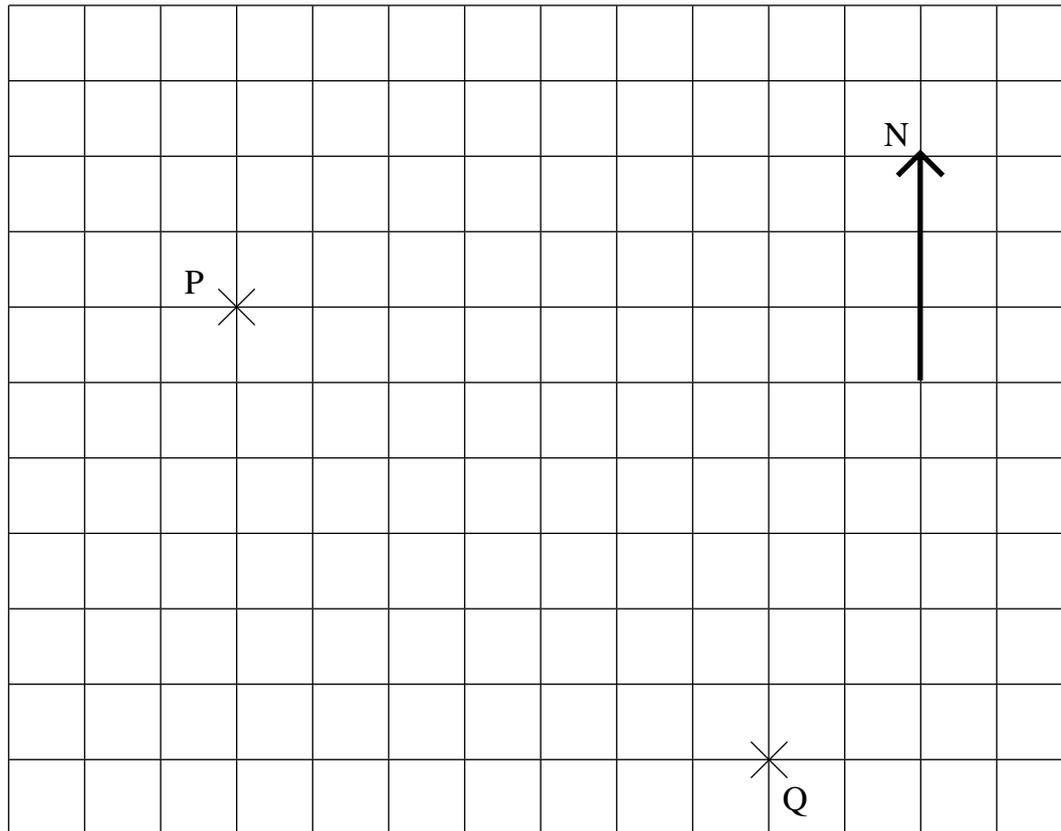
- (b)** Calculate $\frac{1}{3} \times \frac{2}{5}$

Answer _____ [1]

Examiner Only

Marks Remark

13 Two ships are at the points P and Q on the diagram.



(a) Measure the bearing of Q from P.

Answer _____° [1]

(b) The scale of the drawing is 1 cm to 5 km.
Work out the actual distance between the two ships.

Answer _____ km [3]

Examiner Only	
Marks	Remark

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