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Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics

Module N2 Paper 1
(Non-calculator)
Foundation Tier

[GMN21]

WEDNESDAY 11 JANUARY
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 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	

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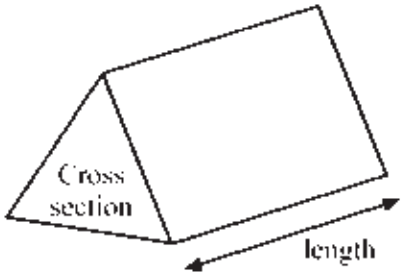
Formula Sheet

Volume of prism = area of cross section × length



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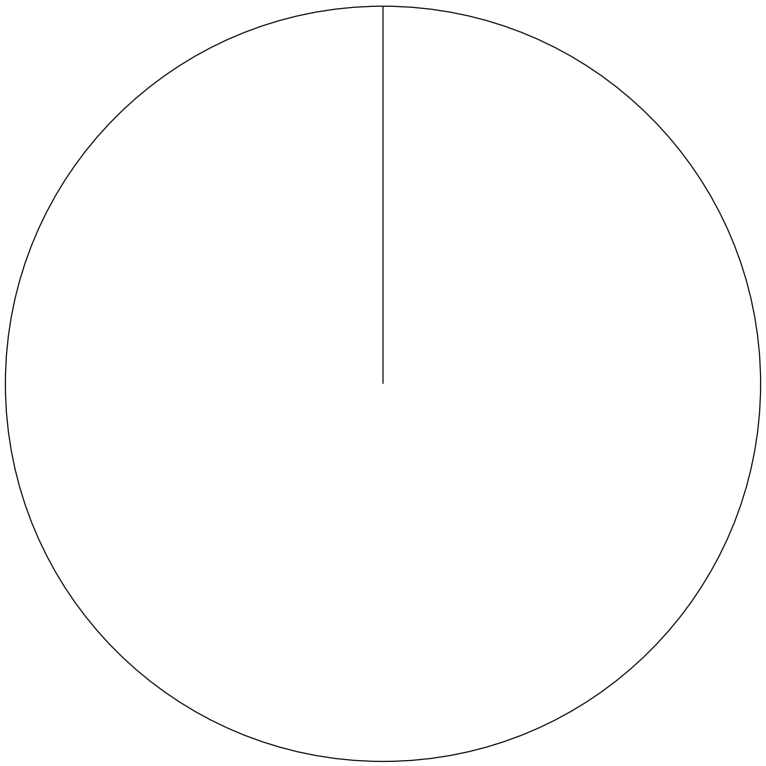
1 A travel agency recorded the types of holiday which were booked on a particular week.

The table below shows the results.

Type of Holiday	Frequency	Degrees
Bed & Breakfast	20	
Hotel half-board	22	
Self-catering	6	
Camping	12	

Complete an accurate pie chart below to show this information.



[4]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

2 Solve the equations

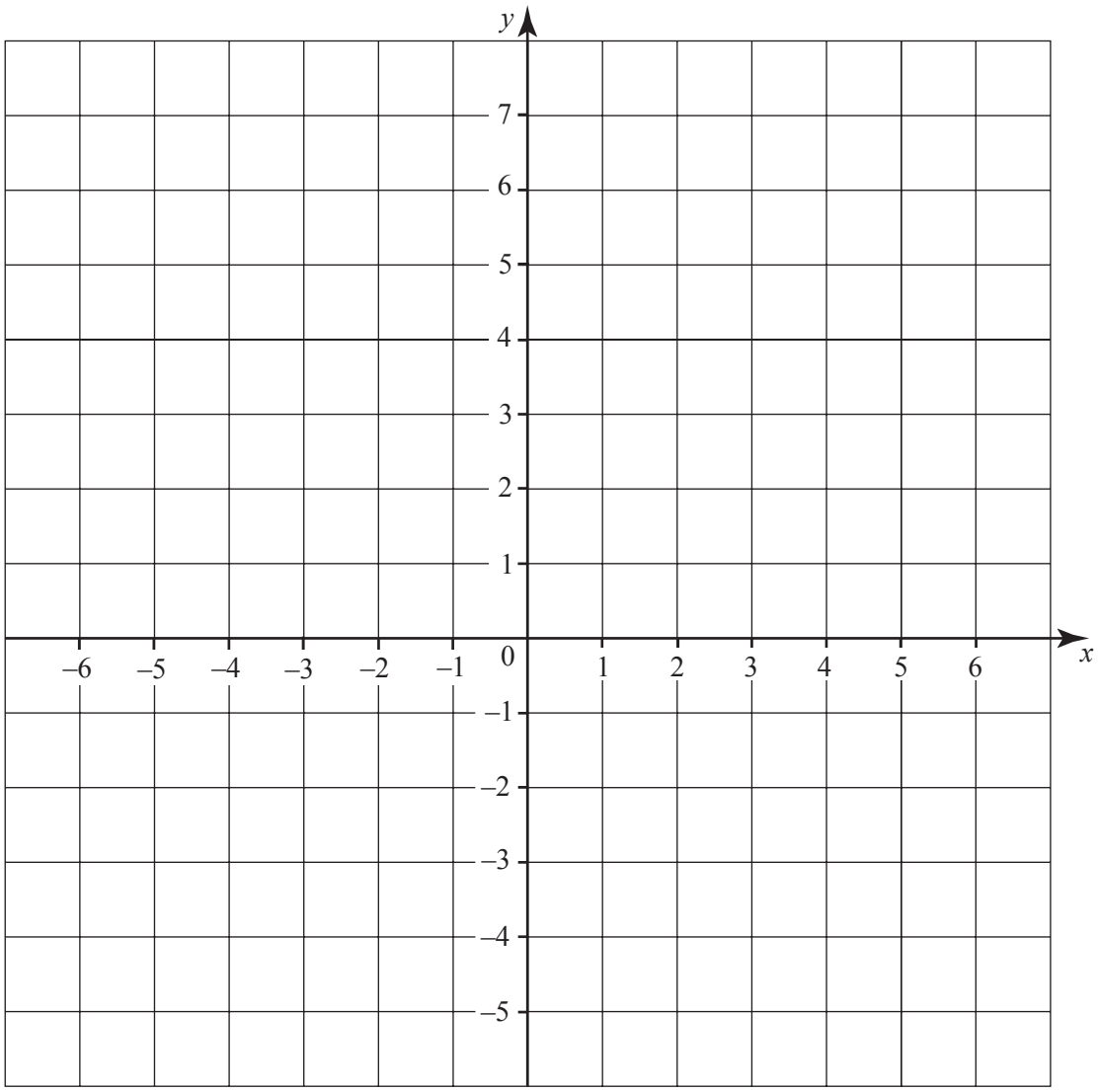
(a) $9x - 5 = 58$

Answer $x =$ _____ [2]

(b) $\frac{x}{8} = 3$

Answer $x =$ _____ [1]

3



Draw the line $x = 5$ on the grid above. [1]

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4 A group of students take class tests in both English and Mathematics.

Each test is marked out of 50.

The stem and leaf diagrams below show the distribution of marks for both tests.

	English
0	
1	2 5 6 9
2	3 6 7 7 8
3	0 2 4 5 5
4	1 2 2 3 6
5	0

	Mathematics
0	9
1	0 1 2 6 7
2	1 3 4 5 7 8 8
3	2 5 7 9
4	1 4 8
5	

Key: 2 | 5 means 25

(a) Which subject has the bigger range of marks and by how much?

Answer _____ has the bigger range by _____ [2]

(b) Which subject has the bigger median mark and by how much?

Answer _____ has the bigger median mark by _____ [2]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

5 **(a)** Simplify $6x + 3y - 2x + 2y$

Answer _____ [2]

(b) Factorise

(i) $20d + 35$

Answer _____ [1]

(ii) $y^2 + y$

Answer _____ [1]

---

6 **(a)** Calculate the size of angle a.

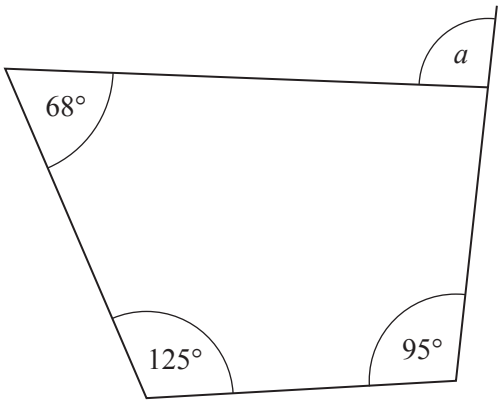

Diagram not drawn accurately

Answer a = _____° [3]

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(b) A square just touches an equilateral triangle as shown.

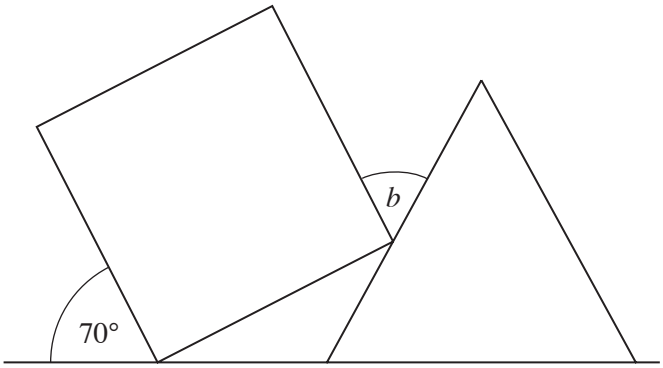

Diagram not drawn accurately

Calculate the size of angle b.

Answer b = _____° [3]

(c) AB is parallel to CD. EF is a straight line. BC = BD. Angle ABC = 42°.

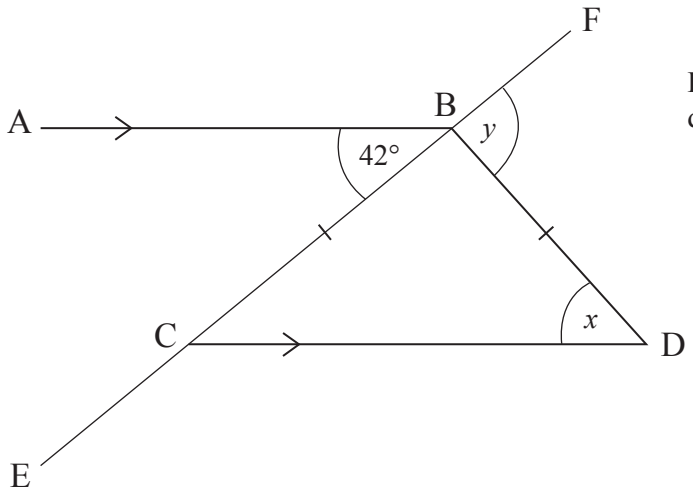

Diagram not drawn accurately

(i) Calculate the size of angle x.

Answer x = _____° [1]

(ii) Calculate the size of angle y.

Answer y = _____° [2]

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Marks	Remark

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Marks	Remark

7 Aaron wants to find out how often people go to the cinema.
He designs the following questionnaire to use to gather data for his survey.

> How often do you go to the cinema?
>
> Tick one box below.
>
> Not very often ☐ Sometimes ☐ A lot ☐

(a) Write down two things that are wrong with this questionnaire.

1. _____

_____

2. _____

_____ [2]

(b) Design a better questionnaire for him to use to find out how often people go to the cinema.
You should include some response boxes.

[2]

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Marks	Remark

8 A minibus can carry 10 passengers and a car can carry 4 passengers.

Write down an expression for the **total** number of passengers that can be carried in x minibuses and y cars.

Answer _____ [2]

---

9 **(a)** Write 24 as a product of prime factors.

Answer _____ [2]

(b) Hence or otherwise find the lowest common multiple (LCM) of 24 and 30.

Answer _____ [2]

---

10 **(a)** Expand and simplify $7(2a + 3) + 3(4a - 2)$.

Answer _____ [2]

(b) Kyle bought 6 pears at x pence each and 3 tins of meat at $4x$ pence each. He got £4.24 change from £10

Write down an equation in terms of x and solve it to find the value of x.

Answer x = _____ [4]

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11 From a large bottle containing $2\frac{1}{2}$ litres of lemonade, a girl pours four full glasses each holding $\frac{2}{5}$ litre.

How many **more** full glasses can she pour before running short of lemonade?

Answer _____ [3]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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