CCEA GCSE MATHEMATICS (MODULAR)

MATHS



EXAM QUESTION PACK

MODULE N1 PAPER 1 (NON-CALCULATOR) FOUNDATION TIER GMN11 PAPERS

STEMUP

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Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics

Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

WEDNESDAY 11 JANUARY
9.15 am – 10.00 am

GMN11

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

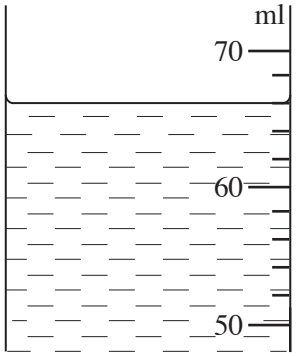
The total mark for this paper is 44.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.

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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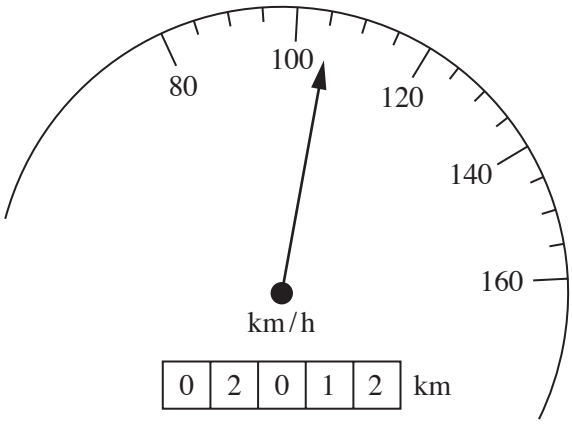
Examiner Only	
Marks	Remark

1 **(a)** Write down the volume of water in this measuring cylinder.



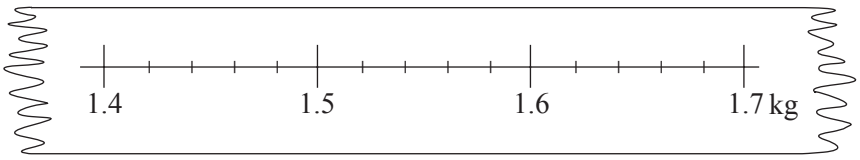
Answer _____ ml [1]

(b) Write down the speed shown by the arrow.



Answer _____ km/h [1]

(c) Draw an arrow to show the mass of a block of wood of 1.53 kg.



[1]

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2 Here is a pictogram showing the number of members who played at the local tennis club last week.

Monday	⊕ ⊕ ◁
Tuesday	⊕ ⊕ ⊕ ⊕
Wednesday	⊕ ⊕ ◁
Thursday	⊕ ⊕ ◁
Friday	⊕ ⊕ ⊕ ◔
Saturday	

⊕ represents 4 members

(a) Write down the number of members who played on Wednesday.

Answer _____ [1]

(b) On which two days were there the same number of members playing?

Answer _____ and _____ [1]

(c) How many members in total played on Thursday and Friday if no member played on both days?

Answer _____ [1]

(d) On Saturday 21 members played at the club.

Show this on the pictogram. [1]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

3 **(a)** Write 0.4 as a percentage.

Answer _____% [1]

(b) Write 0.35 as a fraction.

Give your answer in its **simplest** form.

Answer _____ [2]

(c) Write 5% as a decimal.

Answer _____ [1]

4

4	5	6
8	9	10
12	14	17
21	25	35

From the numbers in the grid, write down:

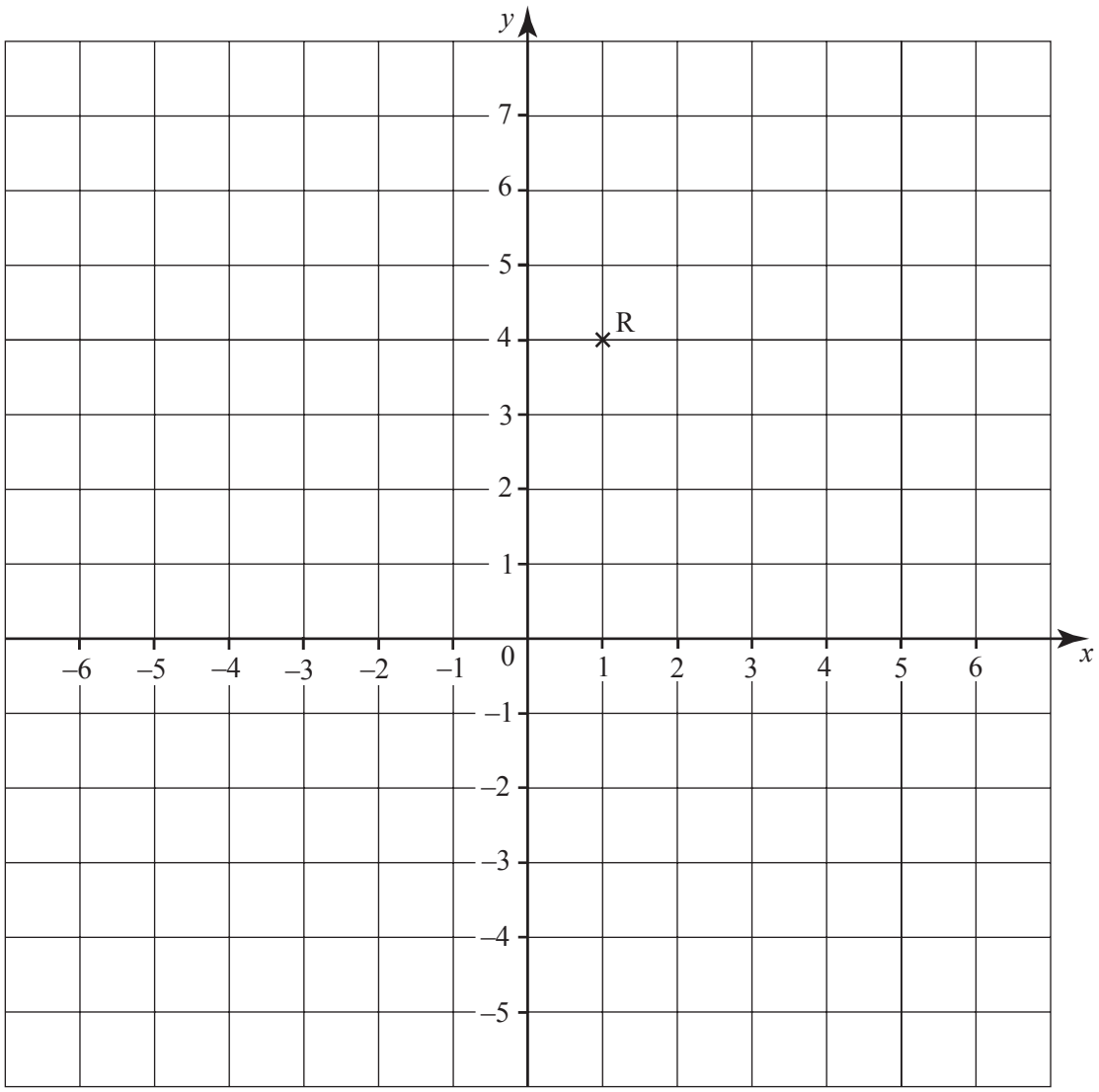
(a) the multiples of 3, Answer _____ [2]

(b) the factors of 48, Answer _____ [2]

(c) the prime numbers. Answer _____ [2]

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5



(a) Write down the co-ordinates of the point R.

Answer (_____ , _____) [1]

(b) Plot and label the points S (–5, 2) and T (–1, –2). [2]

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Marks	Remark

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Examiner Only	
Marks	Remark

6 The table shows the minimum and maximum daily temperatures in six cities in January.

City	Minimum °C	Maximum °C
Paris	–1	12
London	–2	9
Barcelona	3	16
Moscow	–15	–1
Athens	0	15
Glasgow	–5	4

(a) Which city recorded the lowest **minimum** temperature?

Answer _____ [1]

(b) What is the difference in °C between Glasgow's minimum and maximum temperatures?

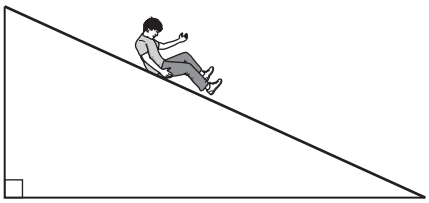
Answer _____°C [1]

(c) Which two cities had the same difference between their minimum and maximum temperatures?

Answer _____ and _____ [1]

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Examiner Only	
Marks	Remark

7 **(a)** 

David plays on a slide which has a ladder of vertical height 1.5 m and a sloped length of 3 m.

Using a scale of 1 m = 3 cm, construct, **as a right angled triangle**, a scale drawing to represent the slide.

[2]

(b) Measure the angle the sloped length makes with the ground.

Answer _____° [1]

Examiner Only	
Marks	Remark

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

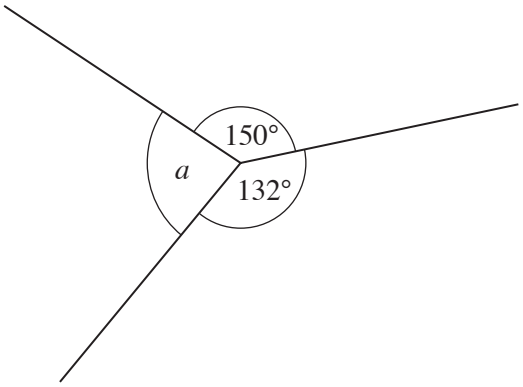


Diagram not drawn accurately

Answer a = _____° [2]

(b) A square just touches a triangle as shown.

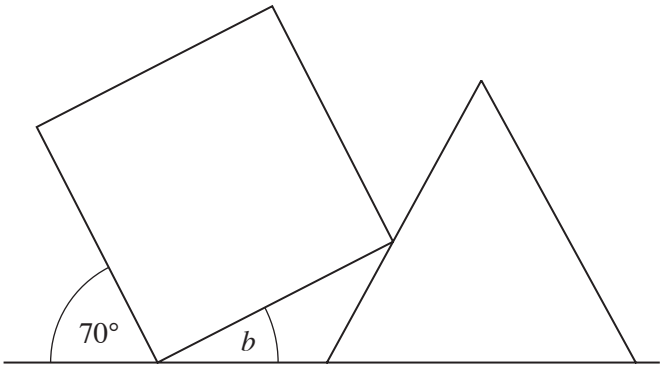


Diagram not drawn accurately

Calculate the size of angle b.

Answer b = _____° [2]

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(c) Calculate the size of angle c.

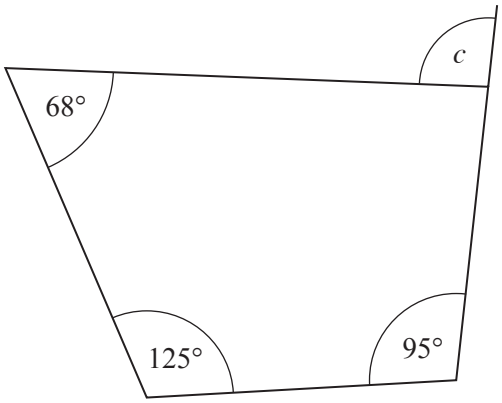


Diagram not drawn accurately

Answer c = _____° [3]

Examiner Only	
Marks	Remark

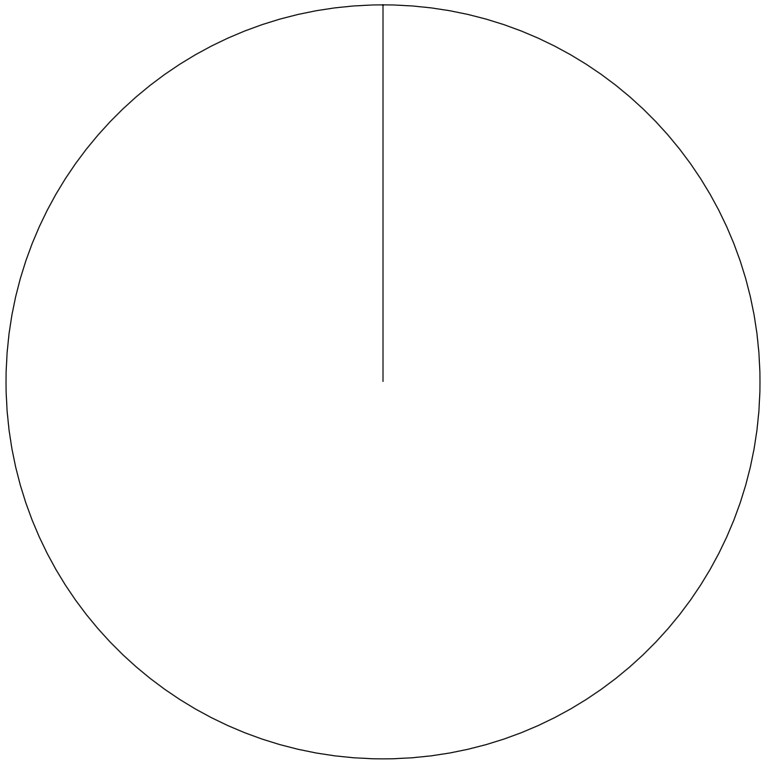
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9 A travel agency recorded the types of holiday which were booked on a particular week.

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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10 Solve the equations

Examiner Only	
Marks	Remark

(a) $9x - 5 = 58$

Answer $x =$ _____ [2]

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

Answer $x =$ _____ [1]

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11 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]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only

Marks	Remark

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Rewarding Learning

General Certificate of Secondary Education
January 2012

Mathematics

Modular N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

WEDNESDAY 11 JANUARY
9.15 am – 10.00 am

MARK SCHEME

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Introduction

The mark scheme normally provides the most popular solution to each question. Other solutions given by candidates are evaluated and credit given as appropriate; these alternative methods are not usually illustrated in the published mark scheme.

The solution to a question gains marks for correct method and marks for accurate working based on this method. The marks awarded for each question are shown in the right-hand column and they are prefixed by the letters **M**, **A** and **MA** as appropriate. The key to the mark scheme is given below:

M indicates marks for correct method.

A indicates marks for accurate working, whether in calculation, reading from tables, graphs or answers. Accuracy marks may depend on preceding **M** (method) marks, hence **M**0 **A**1 cannot be awarded, i.e where the method is not correct no marks can be given.

MA indicates marks for combined method and accurate working.

A later part of a question may require a candidate to use an answer obtained from an earlier part of the same question. A candidate who gets the wrong answer to the earlier part and goes on to the later part is naturally unaware that the wrong data is being used and is actually undertaking the solution of a parallel problem from the point at which the error occurred. If such a candidate continues to apply correct method, then the candidate's individual working must be **followed through** from the error. If no further errors are made, then the candidate is penalised only for the initial error. Solutions containing two or more working or transcription errors are treated in the same way. This process is usually referred to as "follow-through marking" and allows a candidate to gain credit for that part of a solution which follows a working or transcription error.

It should be noted that where an error trivialises a question, or changes the nature of the skills being tested, then as a general rule, it would be the case that not more than half the marks for that question or part of that question would be awarded; in some cases the error may be such that no marks would be awarded.

Positive marking:

It is our intention to reward candidates for any demonstration of relevant knowledge, skills or understanding. For this reason we adopt a policy of following through their answers, that is, having penalised a candidate for an error, we mark the succeeding parts of the question using the candidate's value or answers and award marks accordingly.

Some common examples of this occur in the following cases:

(a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;

(b) readings taken from candidates' inaccurate graphs may not agree with the answers expected but might be consistent with the graphs drawn.

When the candidate misreads a question in such a way as to make the question easier, only a proportion of the marks will be available (based on the professional judgement of the examiner).

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General Marking Advice

(i) If the correct answer is seen in the body of the script and the answer given in the answer line is clearly a transcription error, full marks should be awarded.

(ii) If the answer is missing, but the correct answer is seen in the body of the script, full marks should be awarded.

(iii) If the correct answer is seen in working but a completely different answer is seen in the answer space, then some marks will be awarded depending on the severity of the error.

(iv) Work crossed out but not replaced should be marked.

(v) In general, if two or more methods are offered, mark only the method that leads to the answer on the answer line. If two (or more) answers are offered (with no solution offered on the answer line), mark the poorest answer.

(vi) For methods not provided for in the mark scheme, give as far as possible equivalent marks for equivalent work.

(vii) Where a follow through mark is indicated on the mark scheme for a particular part question, the marker must ensure that you refer back to the answer of the previous part of the question.

(viii) Unless the question asks for an answer to a specific degree of accuracy, always mark at the greatest number of significant figures seen. E.g. the answer in the mark scheme is 4.65 and the candidate then correctly rounds to 4.7 or 5 on the answer line. Allow full marks for 4.65 seen in the working.

(ix) Anything in the mark scheme which is in brackets (…) is not required for the mark to be earned, but if present it must be correct.

(x) For any question, the range of answers given in the mark scheme is inclusive.

Quality of written communication

In GCSE Mathematics, particular questions are identified where candidates must demonstrate the quality of their written communication.

In particular, candidates must:

(i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear (i.e. comprehension and meaning is clear by using the correct notation and labelling conventions);

(ii) select and use a form and style of writing appropriate to their purpose and to complex subject matter (i.e. reasoning, explanation or argument is correct and appropriately structured to convey mathematical reasoning); and

(iii) organise information clearly and coherently, using specialist vocabulary where appropriate (i.e the mathematical methods and processes used are coherently and clearly organised and appropriate mathematical vocabulary used).

This assessment may be through, for example, an explanation of the geometrical properties of a given shape or, for example, through concise mathematical argument in a multi-step problem.

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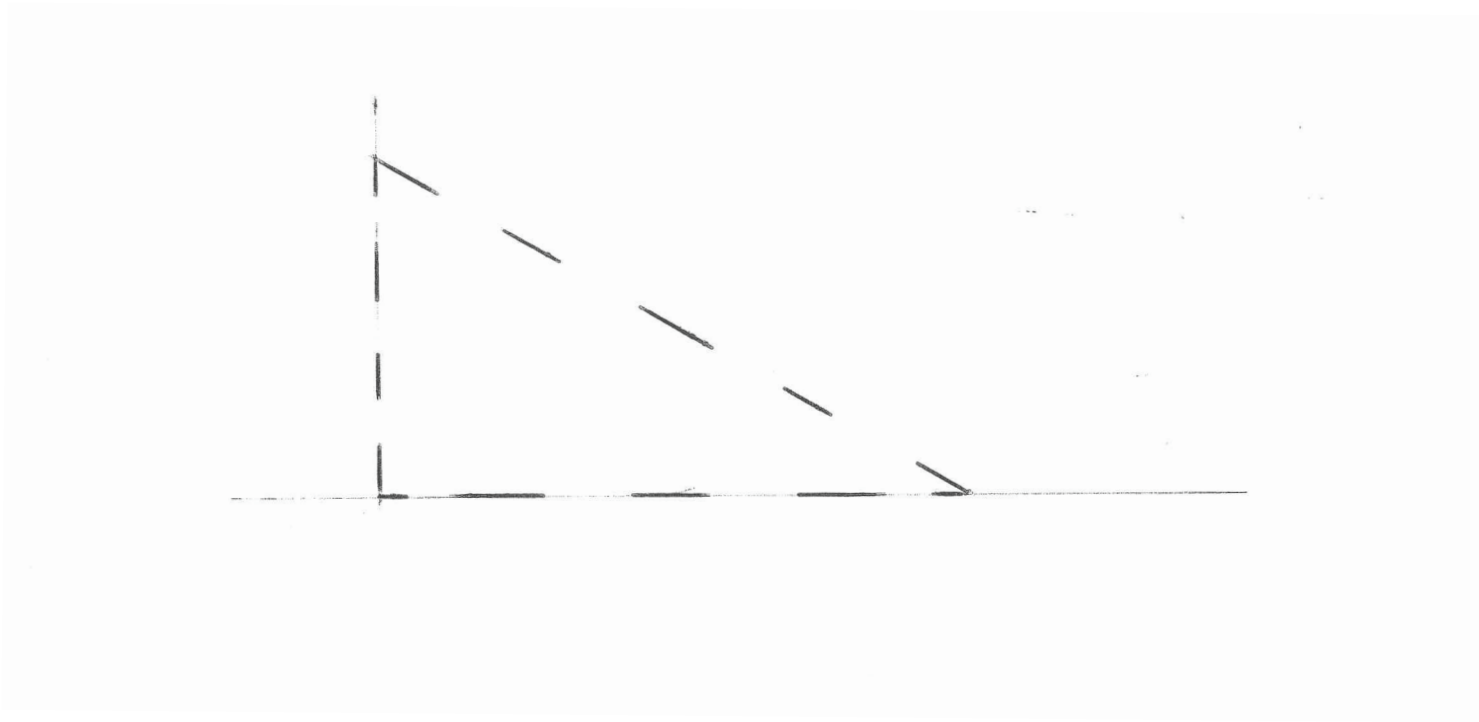
				AVAILABLE MARKS
1	**(a)**	66	A1	
	(b)	105	A1	
	(c)	1.53 correctly marked	MA1	3
2	**(a)**	9	A1	
	(b)	Monday and Thursday	A1	
	(c)	25	A1	
	(d)	$5\frac{1}{4}$ circles marked	A1	4
3	**(a)**	40%	A1	
	(b)	$\frac{35}{100} = \frac{7}{20}$	A1, A1	
	(c)	0.05	A1	4
4	**(a)**	6, 9, 12, 21	A2 (A1 for 3 correct)	
	(b)	4, 6, 8, 12	A2 (A1 for 3 correct)	
	(c)	5, 17	A2 (A1 for 1 correct)	6
5	**(a)**	(1, 4)	A1	
	(b)	correct points	A1, A1	3
6	**(a)**	Moscow	A1	
	(b)	9	A1	
	(c)	Paris and Barcelona	A1	3
7	**(a)**	Height (4.5 cm) at 90° (±2°) to base, correctly drawn (±2 mm) Sloped length (9 cm) correctly drawn (±2 mm) plus triangle completed	MA1 MA1	
	(b)	30 (±2) **or** candidate's angle (±2)	A1	3

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				AVAILABLE MARKS
8	**(a)**	$a = 360 - (150 + 132)$ $= 78$	M1, A1	
	(b)	$b = 180 - (70 + 90)$ $= 20$	M1, A1	
	(c)	$360 - (68 + 125 + 95) = 72$ $180 - 72 = 108$	MA1 M1, A1	7
9		Angles are 120°, 132°, 36° and 72°	M1, A1	
		Each sector correctly drawn and labelled (±2°) (For no work shown A1 each correct, labelled sector)	MA2	4
10	**(a)**	$9x = 63$ $x = 7$	MA1 A1	
	(b)	24	MA1	3
11	**(a)**	Mathematics; $(39 - 38) = 1$	A2	
	(b)	English; $(31 - 26) = 5$	A2	4
			Total	**44**

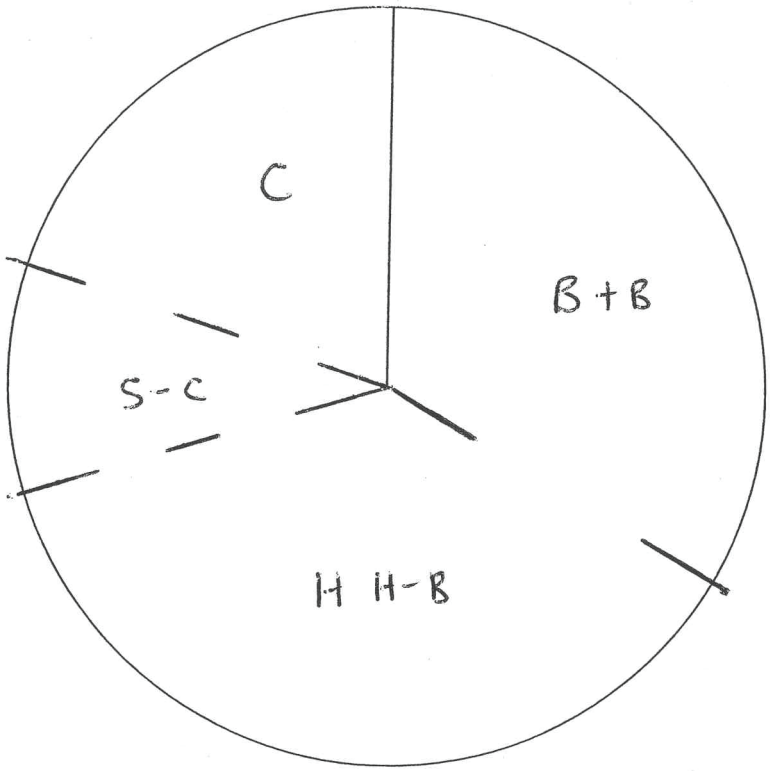
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GCSE MATHEMATICS JANUARY 2012
MODULE N1–1
OVERLAY QUESTION 7A



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GCSE MATHEMATICS JANUARY 2012
MODULE N1–1
OVERLAY QUESTION 9



Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
2011

Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

TUESDAY 31 MAY

9.15 am–10.00 am

GMN11

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

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For Examiner's use only	
Question Number	**Marks**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
Total Marks	

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1

23	75	44
50	12	47
14	49	24

Examiner Only

Marks	Remark

(a) **From the numbers in the grid**, write down

(i) two numbers with a total of 70,

Answer _____ , _____ [1]

(ii) two numbers with a difference of 30,

Answer _____ , _____ [1]

(iii) two factors of 48,

Answer _____ , _____ [1]

(iv) a square number.

Answer _____ [1]

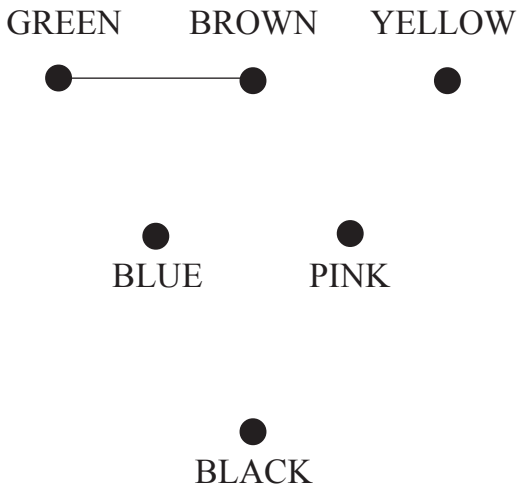
(b) What is the biggest number you can get by multiplying any two numbers in the grid?

Answer _____ [2]

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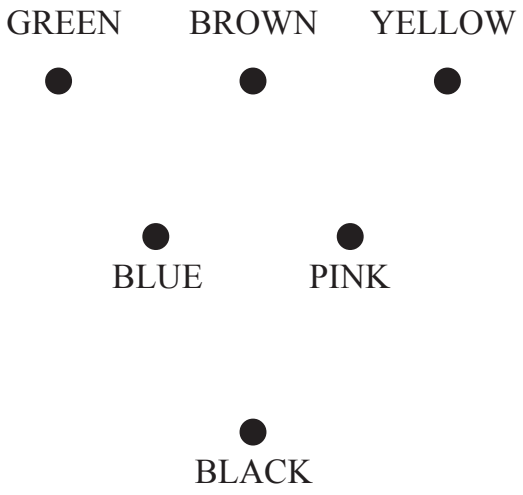
Examiner Only	
Marks	Remark

2 **(a)** Six snooker balls are spaced as shown.



(i) On the diagram above, draw another straight line linking 2 balls to make an obtuse angle. [1]

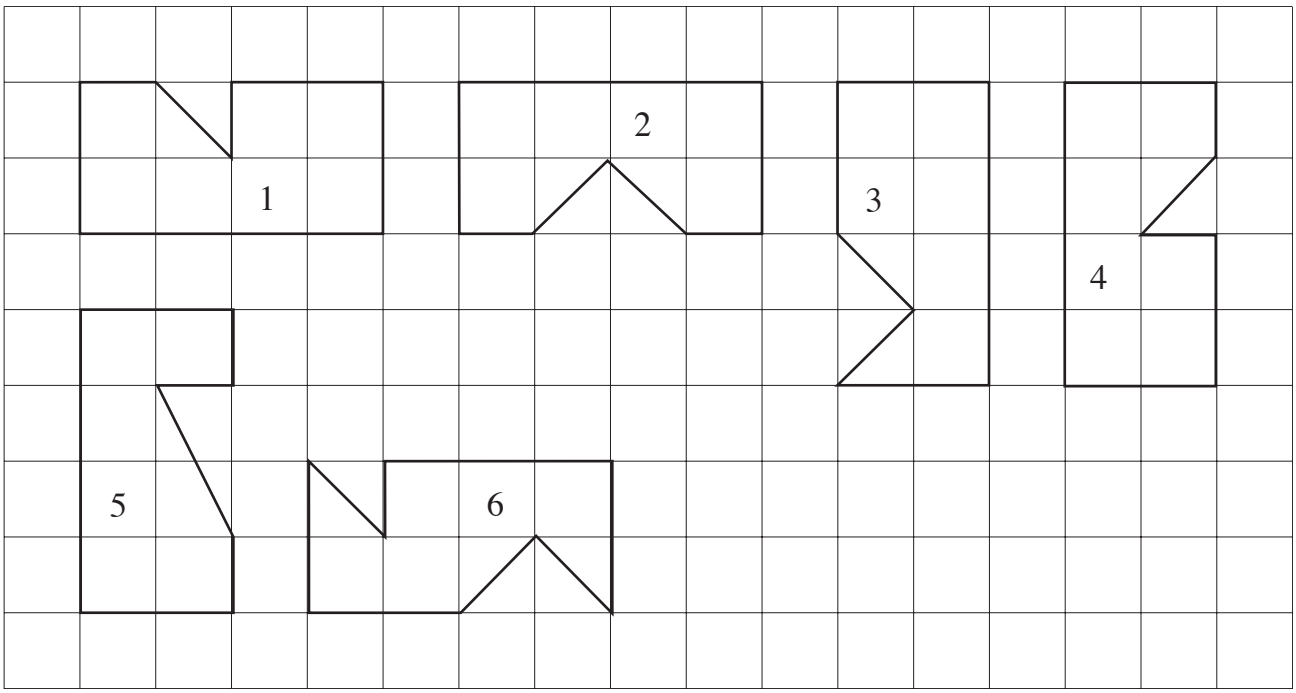
(ii) On the diagram below, draw 2 straight lines linking balls to make an acute angle. [1]



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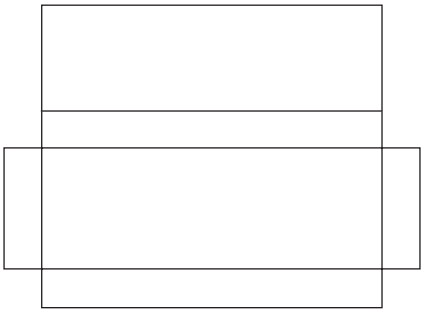
(b) Six shapes are shown.

Which two shapes are congruent?



Answer Shape _____ and shape _____ are congruent. [1]

(c)



This is a net of which solid?

Answer _____ [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

3 80 cakes were sold in a bakery. The first four rows of the pictogram are shown below.

CAKE SALES

Fruit	○ ○ ○ ○ ○
Iced Sponge	○ ○ ○ ○
Chocolate	○ ○ ○ ○ ○ ○
Lemon	○ ○
Carrot	

(a) 24 chocolate cakes were sold.

Complete the key: ○ = _____cakes [1]

(b) How many iced sponge cakes were sold?

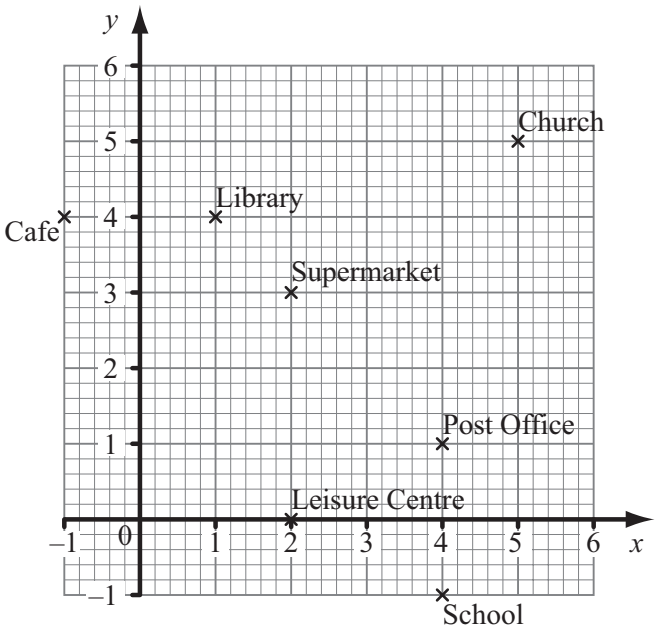
Answer _____ [1]

(c) How many more fruit cakes than lemon cakes were sold?

Answer _____ [1]

(d) Complete the row of the pictogram for carrot cakes. [2]

4



The grid shows the position of places in a town.

(a) Write down the co-ordinates of the Leisure Centre.

Answer (_____ , _____) [1]

(b) Complete the sentence:

The _____ has co-ordinates (4, –1). [1]

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Marks	Remark

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Examiner Only	
Marks	Remark

5 **(a)** Calculate

(i) $266 \div 7$

Answer _____ [1]

(ii) $\frac{3}{4}$ of 48

Answer _____ [2]

(iii) 0.6×0.4

Answer _____ [1]

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

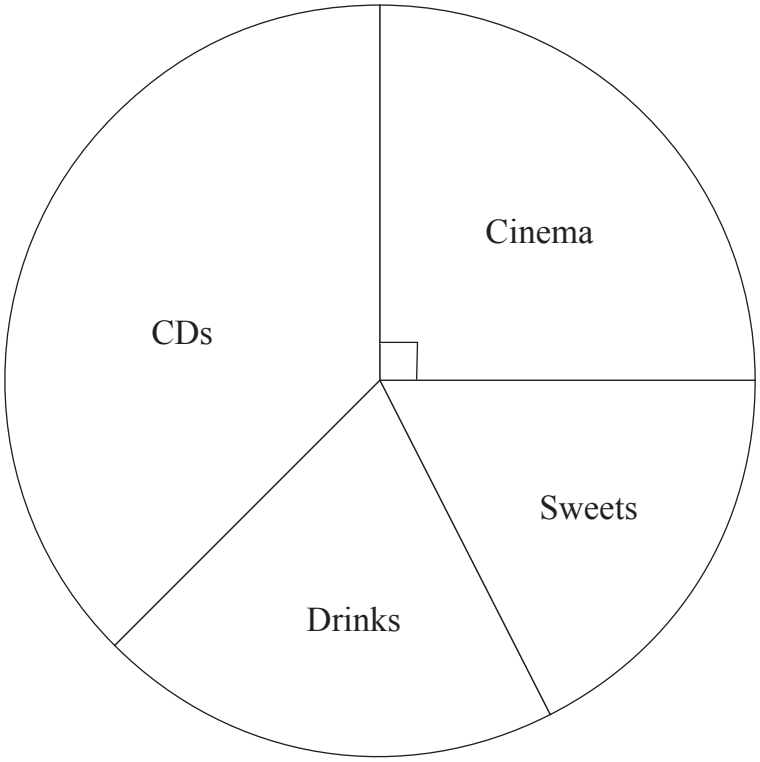
Answer _____ [2]

(b) Write down the value of $\sqrt{81}$

Answer _____ [1]

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6 The pie chart shows how Angie spent £16 pocket money.



(a) How much money was spent on the cinema?

Answer £ _____ [1]

(b) Estimate how much money was spent on CDs.

Answer £ _____ [1]

(c) Measure the angle for drinks.

Answer _____ ° [1]

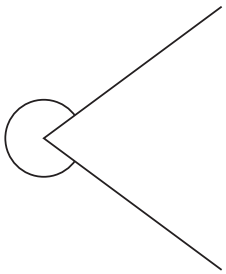
Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

7 **(a)** Circle the correct answer.



The angle marked is

(i) opposite **(ii)** reflex

(iii) acute **(iv)** obtuse

[1]

(b) In the diagram PQR is a straight line.

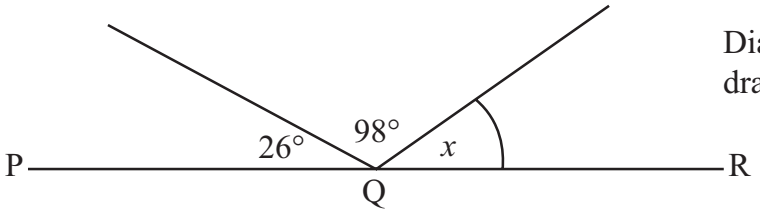


Diagram not drawn accurately

Calculate the size of angle x

Answer x = _____ ° [1]

(c) Calculate the size of angle y

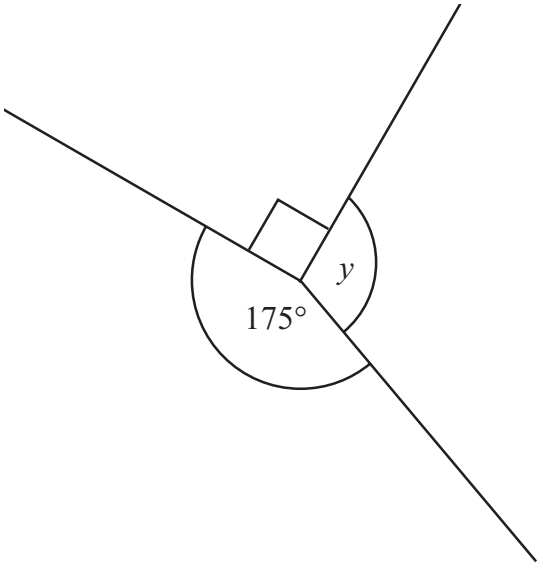


Diagram not drawn accurately

Answer y = _____ ° [1]

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Examiner Only	
Marks	Remark

8 **(a)** $5a = 14$ Write down the value of $15a$.

Answer _____ [1]

(b) Solve $3t - 7 = 5$

Answer $t =$ _____ [2]

9 **(a)** Calculate 80% of 40

Answer _____ [2]

(b) Work out $7.3 - 3.86$

Answer _____ [1]

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Examiner Only	
Marks	Remark

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

3	5 7 8 9	Key 3 | 5 = 3.5 kg
4	2 5 6 8 9 9	
5	1 3 4	

Write down

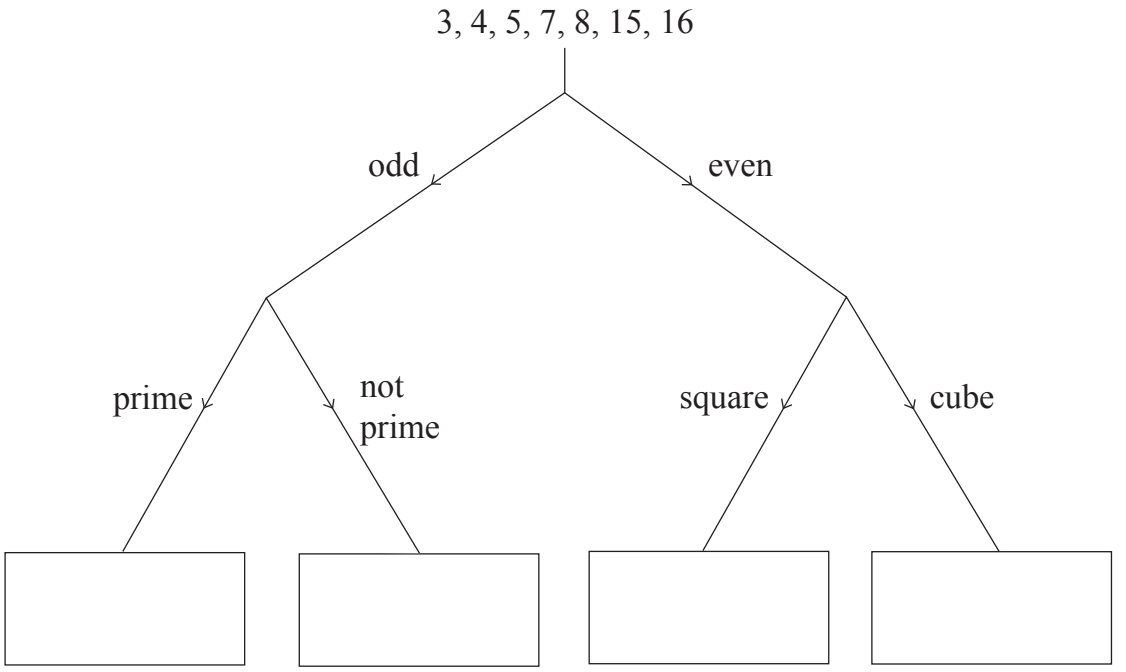
(a) the range,

Answer _____ kg [1]

(b) the median.

Answer _____ kg [1]

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

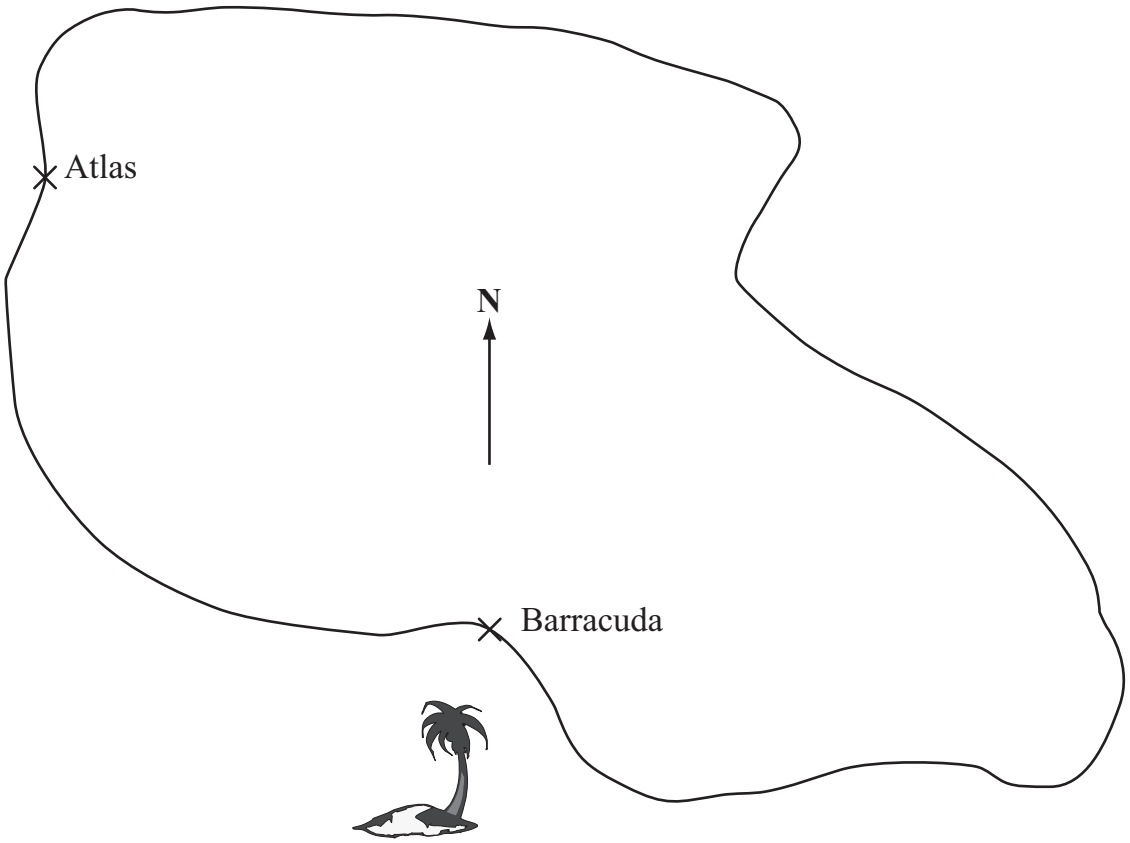


[2]

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12 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]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only

Marks	Remark

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Rewarding Learning

General Certificate of Secondary Education
Summer 2011

Mathematics

Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

TUESDAY 31 MAY

9.15 am – 10.00 am

MARK SCHEME

STEMUP.CO.UK

Introduction

The mark scheme normally provides the most popular solution to each question. Other solutions given by candidates are evaluated and credit given as appropriate; these alternative methods are not usually illustrated in the published mark scheme.

The solution to a question gains marks for correct method and marks for accurate working based on this method. The marks awarded for each question are shown in the right hand column and they are prefixed by the letters **M**, **A** and **MA** as appropriate. The key to the mark scheme is given below:

M indicates marks for correct method.

A indicates marks for accurate working, whether in calculation, reading from tables, graphs or answers. Accuracy marks may depend on preceding **M** (method) marks, hence **M0 A1** cannot be awarded i.e. where the method is not correct no marks can be given.

MA indicates marks for combined method and accurate working.

A later part of a question may require a candidate to use an answer obtained from an earlier part of the same question. A candidate who gets the wrong answer to the earlier part and goes on to the later part is naturally unaware that the wrong data is being used and is actually undertaking the solution of a parallel problem from the point at which the error occurred. If such a candidate continues to apply correct method, then the candidate's individual working must be **followed through** from the error. If no further errors are made, then the candidate is penalised only for the initial error. Solutions containing two or more working or transcription errors are treated in the same way. This process is usually referred to as "follow-through marking" and allows a candidate to gain credit for that part of a solution which follows a working or transcription error.

It should be noted that where an error trivialises a question, or changes the nature of the skills being tested, then as a general rule, it would be the case that not more than half the marks for that question or part of that question would be awarded; in some cases the error may be such that no marks would be awarded.

Positive marking:

It is our intention to reward candidates for any demonstration of relevant knowledge, skills or understanding. For this reason we adopt a policy of **following through** their answers, that is, having penalised a candidate for an error, we mark the succeeding parts of the question using the candidate's value or answers and award marks accordingly.

Some common examples of this occur in the following cases:

(a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;

(b) readings taken from candidates' inaccurate graphs may not agree with the answers expected but might be consistent with the graphs drawn.

When the candidate misreads a question in such a way as to make the question easier, only a proportion of the marks will be available (based on the professional judgement of the examiner).

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General Marking Advice

(i) If the correct answer is seen in the body of the script and the answer given in the answer line is clearly a transcription error, full marks should be awarded.

(ii) If the answer is missing, but the correct answer is seen in the body of the script, full marks should be awarded.

(iii) If the correct answer is seen in working but a completely different answer is seen in the answer space, then some marks will be awarded depending on the severity of the error.

(iv) Work crossed out but not replaced should be marked.

(v) In general, if two or more methods are offered, mark only the method that leads to the answer on the answer line. If two (or more) answers are offered (with no solution offered on the answer line), mark the poorest answer.

(vi) For methods not provided for in the mark scheme, give as far as possible equivalent marks for equivalent work.

(vii) Where a follow through mark is indicated on the mark scheme for a particular part question, the marker must ensure that you refer back to the answer of the previous part of the question.

(viii) Unless the question asks for an answer to a specific degree of accuracy, always mark at the greatest number of significant figures seen. E.g. the answer in the mark scheme is 4.65 and the candidate then correctly rounds to 4.7 or 5 on the answer line. Allow full marks for 4.65 seen in the working.

(ix) Anything in the mark scheme which is in brackets (...) is not required for the mark to be earned, but if present it must be correct.

(x) For any question, the range of answers given in the mark scheme is inclusive.

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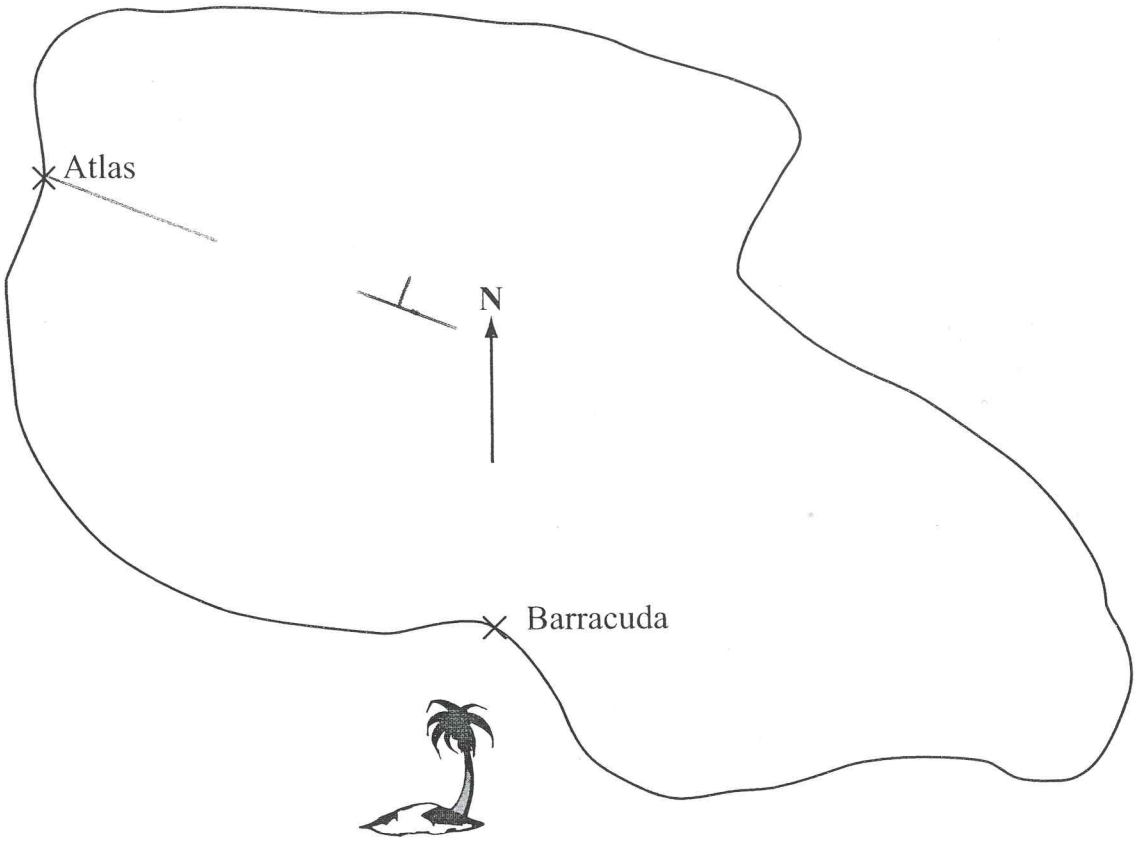
				AVAILABLE MARKS
1	**(a)**	**(i)** 23, 47	A1	
		(ii) 14, 44	A1	
		(iii) 12, 24	A1	
		(iv) 49	A1	
	(b)	50×75	MA1	
		3750	A1	6
2	**(a)**	**(i)** Line drawn correctly	MA1	
		(ii) Lines drawn correctly	MA1	
	(b)	Shape **1** and **4**	A1	
	(c)	cuboid	A1	4
3	**(a)**	4	A1	
	(b)	16	A1	
	(c)	12	A1	
	(d)	3 circles drawn	M1 A1	5
4	**(a)**	(2, 0)	A1	
	(b)	School	A1	2
5	**(a)**	**(i)** 38	A1	
		(ii) 36	A2	
		(iii) 0.24	A1	
		(iv) $\frac{1}{2} = \frac{3}{6}$	A1	
		$\frac{2}{6}$ or $\frac{1}{3}$	A1	
	(b)	9	A1	7

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			AVAILABLE MARKS
6	**(a)** 4	A1	
	(b) 5 − 7 range	A1	
	(c) 72º (allow 2º tolerance)	A1	3
7	**(a)** **(ii)** reflex	A1	
	(b) 56º	MA1	
	(c) 95º	MA1	3
8	**(a)** 42	A1	
	(b) $3t = 12$ $t = 4$	MA1 MA1	3
9	**(a)** 0.8×40 or $\frac{4}{5} \times 40$ or $10\% = 4$	MA1	
	32	A1	
	(b) 3.44	A1	3
10	**(a)** 1.9	A1	
	(b) 4.6	A1	2
11	3, 5, 7 15 4, 16 8 A1 for 4 correct	A2	2
12	**(a)** $8.4 \times 5 = 42 (\pm 1)$	M1 A1	
	(b) Correct Bearing and Correct Distance	A1 A1	4
		Total	**44**

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GCSE MATHEMATICS SUMMER 2011
MODULE N1-1
OVERLAY QUESTION 12



Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

TUESDAY 11 JANUARY
9.15 am – 10.00 am

GMN11

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
Total Marks	

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

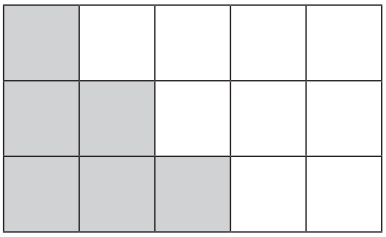
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all thirteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct 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.

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1



(a) What fraction of the above shape is shaded?

Write your answer in its simplest form.

Answer _____ [2]

(b) Write your answer to part **(a)** as a percentage.

Answer _____ % [1]

(c) What percentage of the shape is **not** shaded?

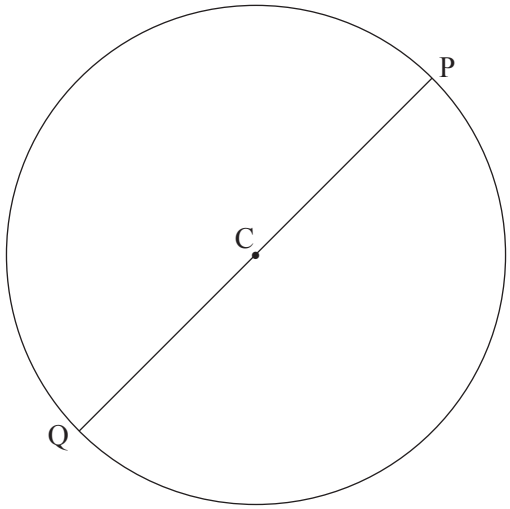
Answer _____ % [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

2 C is the centre of the circle. P and Q are two points on the circumference of the circle.



(a) What is the name of the straight line PQ?

Answer _____ [1]

(b) Draw the tangent at P. [1]

(c) Measure the radius of the circle.

Answer _____ [2]

---

3 **(a)** Using each of the digits 6, 8, 7, 5

(i) write down the largest 4-digit even number,

Answer _____ [1]

(ii) write down the smallest 4-digit odd number.

Answer _____ [1]

(b) Insert a number in the box to make the two fractions equivalent.

$$\frac{5}{7} = \frac{\square}{21}$$ [1]

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Examiner Only	
Marks	Remark

4 **(a)** Fill in the two missing numbers in this sequence

___, 5, 9, 13, 17, ___ [2]

(b) **(i)** Describe in words how to find the fifth term in the sequence below.

4, 7, 11, 16, ...

Answer _____ [1]

(ii) Write down the sixth term in this sequence.

Answer _____ [1]

---

5 The number of books in the bags of a class were recorded.

Number of Books	Frequency
0	2
1	6
2	7
3	6
4	4
5	5

(a) Write down the modal number of books.

Answer _____ [1]

(b) How many pupils were in the class?

Answer _____ [1]

---

6 A chocolate bar costs 72p.

Ruth buys 4 of these chocolate bars.

How much change should she receive from £5?

Answer £ _____ [2]

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Examiner Only	
Marks	Remark

7 The digital clock displays the time of departure of a train.



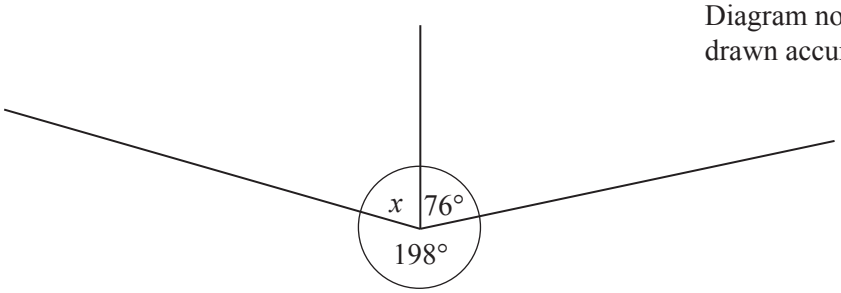
The journey takes 1 hour and 42 minutes.

Write down the arrival time.

Answer _____ [2]

8

Diagram not drawn accurately.



(a) 76° is an acute angle.

What type of angle is 198° ?

Answer _____ [1]

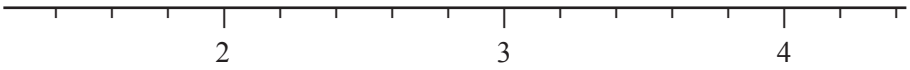
(b) Susan says angle x is also 76°

Explain why she is wrong.

[2]

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9



Draw and label arrows to show A, B and C on the number line above.

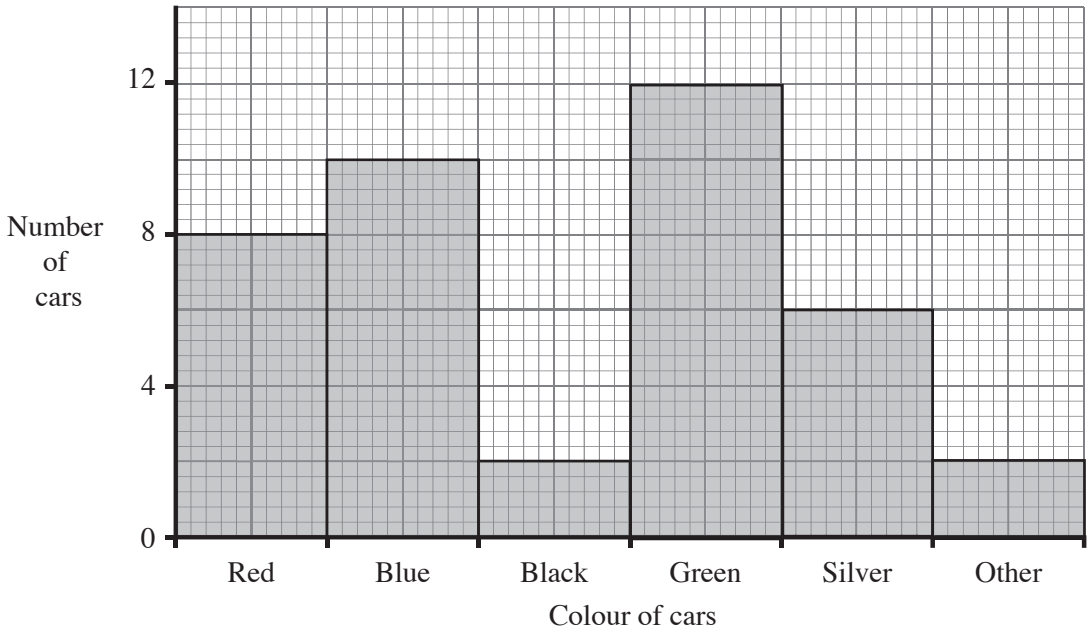
(a) A at 2.9

(b) B at $3\frac{2}{3}$

(c) C at $1\frac{1}{2}$ [3]

Examiner Only	
Marks	Remark

10 The colours of the cars passing the school gates were noted during a school day. The bar chart for the data is shown below.



(a) How many red cars were there?

Answer _____ [1]

(b) How many more blue cars were there than black cars?

Answer _____ [1]

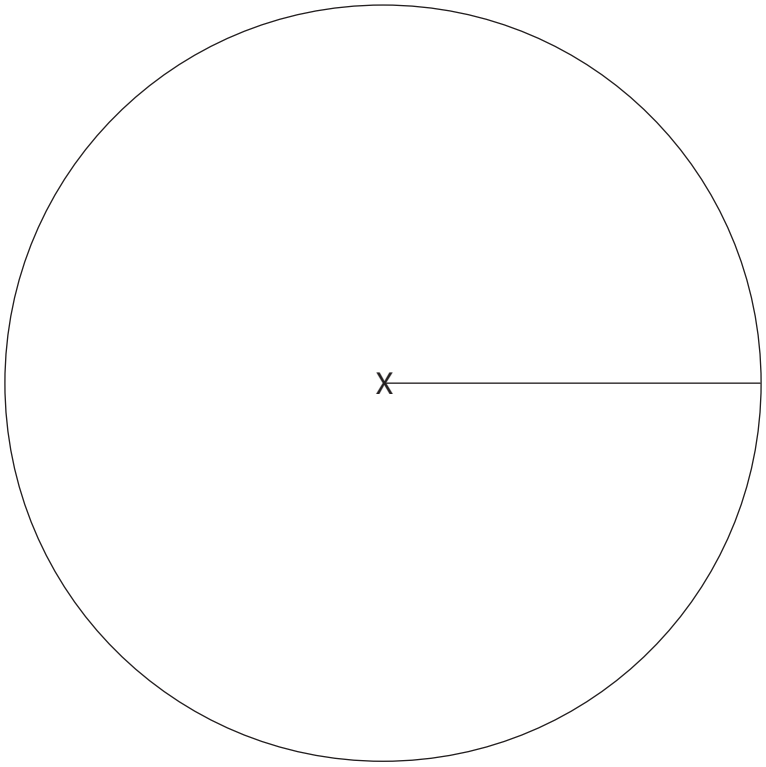
(c) Which colour of car was the most common?

Answer _____ [1]

(d) On another day the colours of cars were

Colour	Red	Blue	Black	Green	Silver	Other
Number of cars	6	12	2	10	8	2

Draw a clearly labelled pie chart for this data.



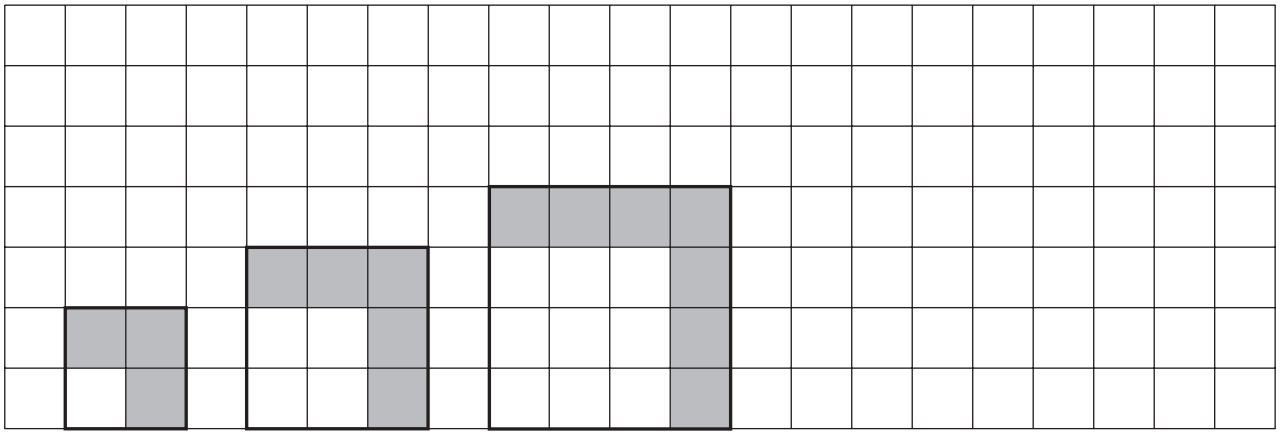
[4]

Examiner Only

Marks	Remark

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11 A sequence of patterns is drawn below.



$2^2 - 1^2$ $3^2 - 2^2$ $4^2 - 3^2$

Examiner Only	
Marks	Remark

(a) Draw the pattern for $5^2 - 4^2$ [1]

(b) Fill in the blanks in the table

$2^2 - 1^2 =$	4	– 1	=	3
$3^2 - 2^2 =$	9	– 4	=	5
$4^2 - 3^2 =$	16	– 9	=	7
$5^2 - 4^2 =$	___	– ___	=	___

[1]

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Examiner Only	
Marks	Remark

12 Work out

(a) 0.3×0.3

Answer _____ [1]

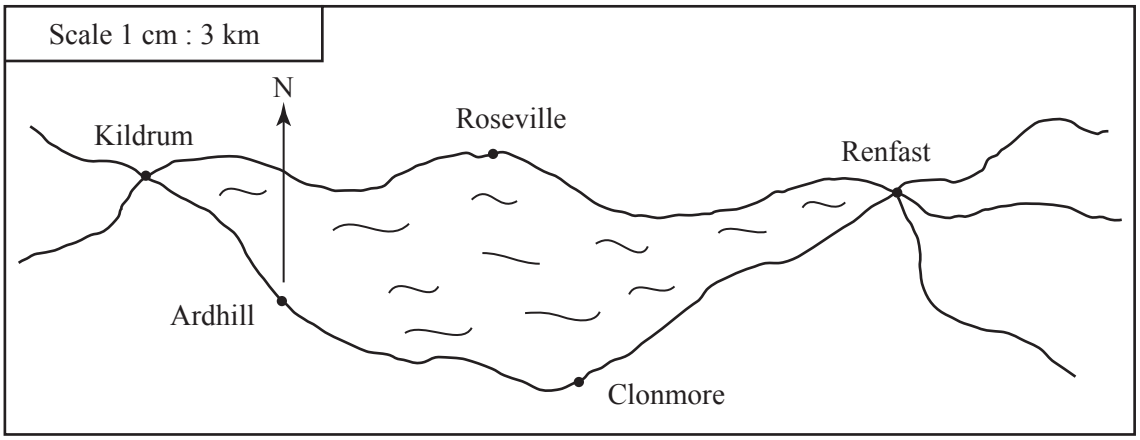
(b) $4.2 - 1.66$

Answer _____ [1]

(c) $\frac{3}{4} - \frac{5}{12}$

Answer _____ [2]

13 The map shows the position of five towns around a lake.



(a) Use the map to measure the bearing of Roseville from Ardhill.

Answer _____ ° [1]

(b) Use the map and scale to find the direct distance across the lake between Kildrum and Clonmore.

Answer _____ km [3]

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THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
January 2011

Mathematics

Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

TUESDAY 11 JANUARY
9.15 am – 10.00 am

MARK SCHEME

STEMUP.CO.UK

Introduction

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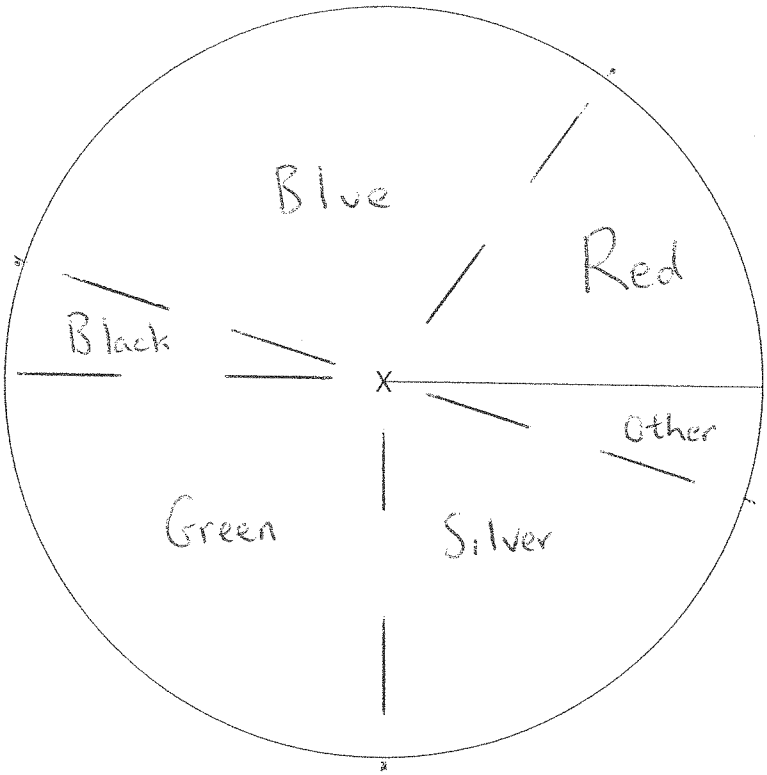
			AVAILABLE MARKS
1	**(a)** $\frac{6}{15} = \frac{2}{5}$	MA1 A1	
	(b) 40	A1	
	(c) 60	A1	4
2	**(a)** Diameter	A1	
	(b) Tangent drawn (reasonable accuracy)	MA1	
	(c) 3.3 cm or 33 mm ($\pm$ 0.2, 2)	A1 A1 for units	4
3	**(a)** **(i)** 8756	A1	
	(ii) 5687	A1	
	(b) 15	A1	3
4	**(a)** 1 and 21	A1 A1	
	(b) **(i)** Add 6	A1	
	(ii) 29	A1	4
5	**(a)** Modal number of books = 2	A1	
	(b) 7 + 6 + 5 + 6 + 4 + 2 = 30	A1	2
6	2.88	MA1	
	2.12	A1	2
7	10:18 allow 1 for 9.78	M1 A1	2
8	**(a)** Reflex	A1	
	(b) 360 − (198 + 76) = 86 *alternatively* 76 + 76 + 198 ≠ 360	M1 A1 M1 A1	3

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			AVAILABLE MARKS
9	A, B, C correct	A1, A1, A1	3
10	**(a)** 8	A1	
	(b) 8	A1	
	(c) Green	A1	
	(d) 40 cars = 360° 1 car = 9°	MA1	
	Red 54° Blue 108° Black 18° Green 90° Silver 72° Other 18°	Angles MA1	
	Sectors and labels	A1 A1	7
11	**(a)** Pattern drawn correctly	A1	
	(b) 25 − 16 = 9	A1	2
12	**(a)** 0.09	A1	
	(b) 2.54	A1	
	(c) $\frac{9}{12} - \frac{5}{12}$	MA1	
	$\frac{1}{3}$ or equivalent	A1	4
13	**(a)** 054 (± 2)	A1	
	(b) 6.3 cm (± 0.2) 6.3 × 3 = 18.9 (± 0.6)	MA1 M1 A1	4
		Total	44

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GCSE MATHEMATICS JANUARY 2011
MODULE N1-1
OVERLAY QUESTION 10



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
2010

Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

GMN11

TUESDAY 1 JUNE

9.15 a.m. – 10.00 a.m.

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	

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Examiner Only	
Marks	Remark

1 In Highfield School, the Year 12 had a "Battle of the Bands" competition. They **all** voted for their favourite band.

A pictogram is used to display the number of votes for each band.

Band name	Number of votes
THUD	
LAST CHANCE	
INK SPOT	
THE SHIVERS	

"THUD" got 35 votes

(a) Complete the key:  means ____ votes [1]

(b) How many votes did "LAST CHANCE" get?

Answer _____ [1]

(c) "INK SPOT" received 13 votes. Complete the pictogram. [1]

(d) How many are there in Year 12?

Answer _____ [1]

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2 Read the clues on the cards below. Name the shape each card describes. The first one is done for you.

Examiner Only	
Marks	Remark

I have three sides

All my angles are the same

Answer equilateral triangle

I have three sides

Only two of my angles are the same

Answer _____ [1]

I have four sides

All my angles are 90°
My sides are **not** all the same length

Answer _____ [1]

I have four sides

Only two of my sides are parallel

Answer _____ [1]

I have four sides

All my sides are equal in length
None of my angles are 90°

Answer _____ [1]

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Examiner Only	
Marks	Remark

3 **(a)** Calculate:

2002 – 869

Answer _____ [2]

(b)

4	**1**	**3**	**8**

(i) Max arranges the cards to make the **second** largest number possible.
What is the number he makes?

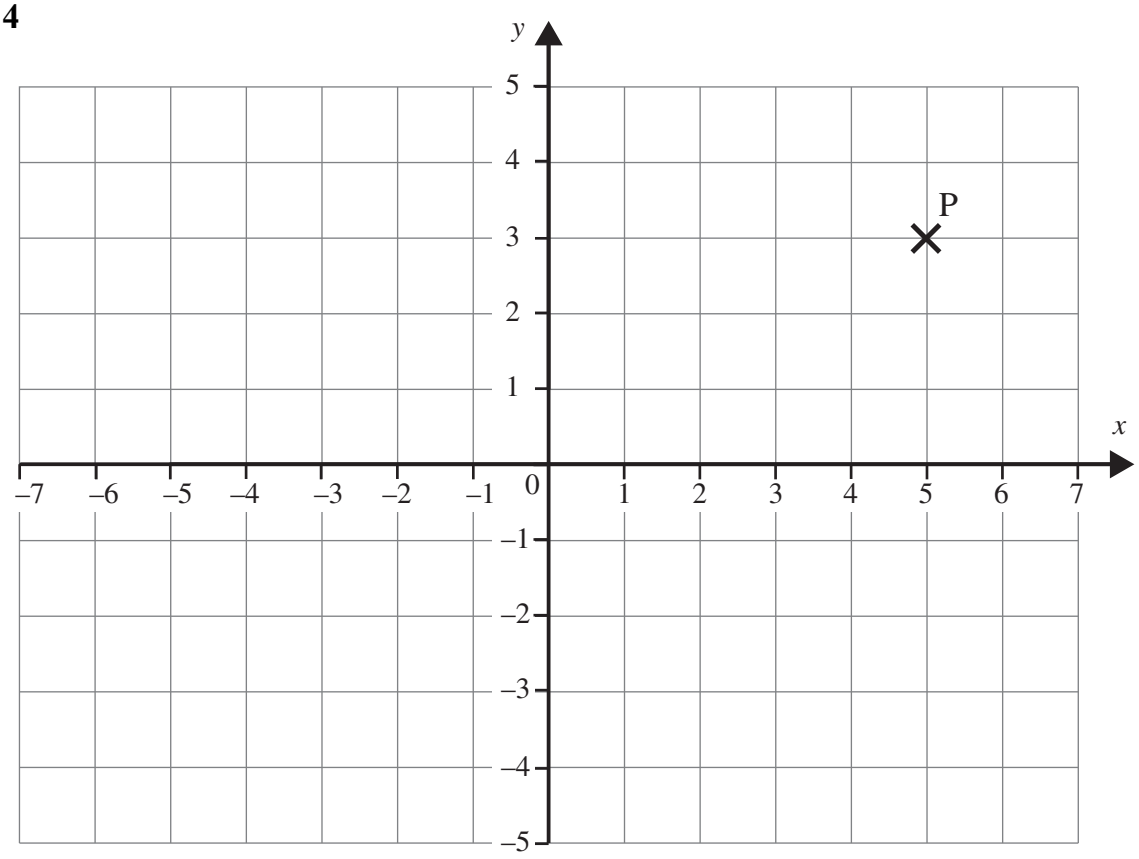
Answer _____ [2]

(ii) Becky chooses three of the cards. The sum of these three cards is a prime number.
What prime number does she get?

Answer _____ [1]

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4



Examiner Only

Marks	Remark

(a) Write down the co-ordinates of the point P.

Answer (_____, _____) [1]

(b) Plot and label the point Q (0, 2). [1]

(c) Draw the line $x = 2$ on the grid above. [1]

---

5 **(a)** Write down all the factors of 24

Answer _____ [2]

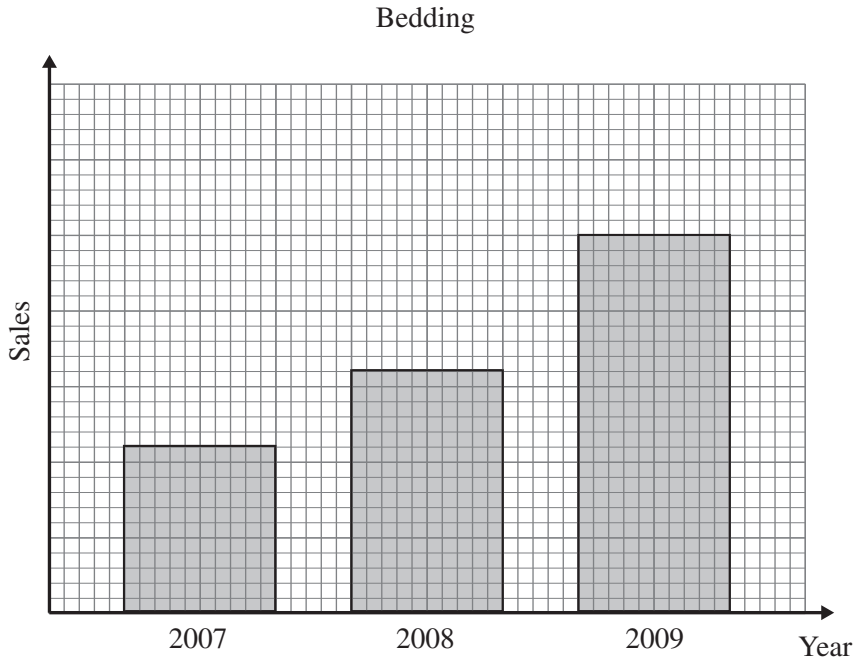
(b) Write down the cube root of 125

Answer _____ [1]

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6 The company "Dreamtime" advertise their sales success with this bar chart.

Examiner Only	
Marks	Remark



(a) (i) What does the bar chart tell you about their sales?

_____

_____ [1]

(ii) What is wrong with this bar chart?

_____

_____ [1]

(b) Each day (Monday to Saturday) for two weeks "Dreamtime" recorded the number of pillow sales.

10 8 12 5 16 24 8 16 14 11 14 20

Find the median number of pillow sales.

Answer _____ [2]

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Examiner Only	
Marks	Remark

7 **(a)** The midday temperature in Paris was 5 °C.
By midnight the temperature had dropped by 9 °C.
What was the midnight temperature in Paris?

Answer _____ °C [1]

(b) The midnight temperature in Moscow was –12 °C.
By midday the temperature was 2 °C.
By how many degrees had the temperature risen?

Answer _____ °C [1]

---

8 In a quiz game, two teams must each answer 80 questions.
They score 1 point for each correct answer.

The quiz is not yet finished.
Each team has answered 60 questions.

??? TEAM A ???	**??? TEAM B ???**
80% of 60 questions correct	$\frac{1}{2}$ of 60 questions correct

Can Team B win the quiz?

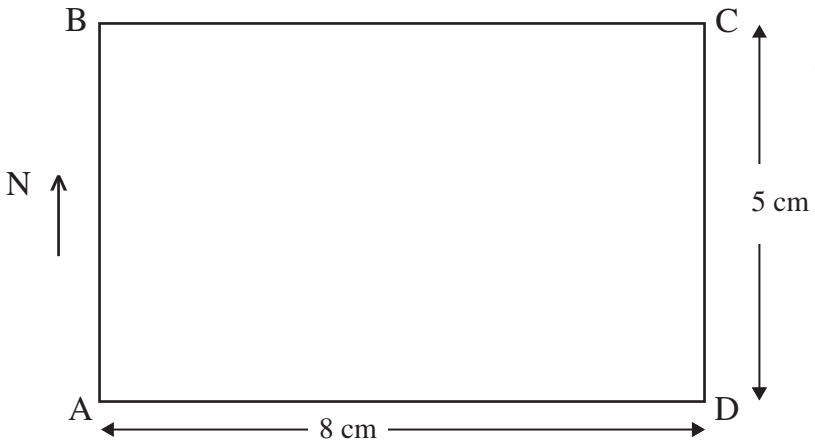
Answer _____

Explain your answer fully.

[4]

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9



This diagram
is drawn accurately

(a) Work out the area of this rectangle.

Answer _____ cm^2 [2]

(b) Work out the perimeter of this rectangle.

Answer _____ cm [1]

(c) Measure the bearing of

(i) C from A,

Answer _____° [1]

(ii) D from B.

Answer _____° [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

10 The stem and leaf diagram shows the ages, in years, of 24 ladies who took part in the Belfast "Runher" 8 km Fun Run in October 2008.

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

Key: 1 | 8 means 18 years old

(a) Write down the modal age.

Answer _____ [1]

(b) How many of the ladies were less than 35 years old?

Answer _____ [1]

(c) Exactly a quarter of the ladies are above a certain age.
What is that age?

Answer _____ [2]

---

11 Solve the equation $7x - 4 = 38$

Answer x = _____ [2]

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Examiner Only	
Marks	Remark

12 Work out the size of the angle marked x in the diagram.

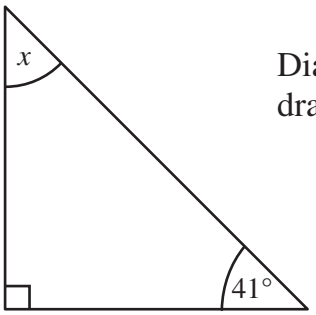


Diagram not drawn accurately

Answer x = _____° [2]

13 Calculate $\frac{2}{5} \times \frac{1}{10}$

Give your answer in its simplest form.

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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GCSE

Mathematics (Modular)

Summer 2010

Mark Schemes

Issued: October 2010

STEMUP.CO.UK

Rewarding Learning

General Certificate of Secondary Education
2010

Mathematics

Module N1 Paper 1
(With calculator)
Foundation Tier

[GMN11]

TUESDAY 1 JUNE

9.15 am – 10.00 am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2010

Introduction

The mark scheme normally provides the most popular solution to each question. Other solutions given by candidates are evaluated and credit given as appropriate; these alternative methods are not usually illustrated in the published mark scheme.

The marks awarded for each question are shown in the right hand column and they are prefixed by the letters **M, A** and **MA** as appropriate. The key to the mark scheme is given below:

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A indicates marks for accurate working, whether in calculation, readings from tables, graphs or answers.

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The solution to a question gains marks for correct method and marks for an accurate working based on this method. Where the method is not correct no marks can be given.

A later part of a question may require a candidate to use an answer obtained from an earlier part of the same question. A candidate who gets the wrong answer to the earlier part and goes on to the later part is naturally unaware that the wrong data is being used and is actually undertaking the solution of a parallel problem from the point at which the error occurred. If such a candidate continues to apply correct method, then the candidate's individual working must be **followed through** from the error. If no further errors are made, then the candidate is penalised only for the initial error. Solutions containing two or more working or transcription errors are treated in the same way. This process is usually referred to as "follow-through marking" and allows a candidate to gain credit for that part of a solution which follows a working or transcription error.

It should be noted that where an error trivialises a question, or changes the nature of the skills being tested, then as a general rule, it would be the case that not more than half the marks for that question or part of that question would be awarded; in some cases the error may be such that no marks would be awarded.

Positive marking:

It is our intention to reward candidates for any demonstration of relevant knowledge, skills or understanding. For this reason we adopt a policy of **following through** their answers, that is, having penalised a candidate for an error, we mark the succeeding parts of the question using the candidate's value or answers and award marks accordingly.

Some common examples of this occur in the following cases:

(a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;

(b) readings taken from candidates' inaccurate graphs may not agree with the answers expected but might be consistent with the graphs drawn.

When the candidate misreads a question in such a way as to make the question easier only a proportion of the marks will be available (based on the professional judgement of the examiner).

			AVAILABLE MARKS
1	**(a)**  means 5 votes	A1	
	(b) 18 votes	A1	
	(c) $2\frac{3}{5}$ drawn	MA1	
	(d) 35 + 18 + 13 + 12 = 78	MA1	4
2	Isosceles triangle	A1	
	Rectangle	A1	
	Trapezium	A1	
	Rhombus	A1	4
3	**(a)** 1133	M1, A1	
	(b) **(i)** 8413	A2 (Allow A1 for 8431)	
	(ii) 13	A1	5
4	**(a)** (5, 3)	A1	
	(b) correct point	A1	
	(c) correct line	A1	3
5	**(a)** 1, 2, 3, 4, 6, 8, 12, 24	A2 (Allow A1 for 5 correct)	
	(b) 5	A1	3
6	**(a)** **(i)** Their sales have increased	A1	
	(ii) No vertical scale	A1	
	(b) 5, 8, 8, 10, 11, 12, 14, 14, 16, 16, 20, 24	M1	
	Median = 13	A1	4
7	**(a)** −4	A1	
	(b) 14	A1	2

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			AVAILABLE MARKS
8	Team A: 80% of 60 = $\frac{4}{5} \times 60 = 48$	M1, A1	
	Team B: $\frac{1}{2}$ of 60 = 30		
	Team B **could** win by **either** answering all the remaining 20 questions correctly while Team A do not answer any more than 1 of their remaining 20 questions correctly **or** answering 19 of the remaining questions while Team A do not answer any of their remaining 20 questions correctly. (or similar explanation)	A2	4
9	**(a)** Area = 8 × 5	MA1	
	= 40 cm^2	A1	
	(b) Perimeter = 8 + 5 + 8 + 5 = 26 cm	MA1	
	(c) **(i)** 058° ± 2°	A1	
	(ii) 122° ± 2°	A1	5
10	**(a)** Modal Age = 33	A1	
	(b) 12	A1	
	(c) 6 ladies are above 41 years	MA1, MA1	4
11	$7x = 42$	MA1	
	$x = 6$	MA1	2
12	41 + 90 = 131	MA1	
	180 – 131 = 49	MA1	2
13	$\frac{2}{50}$	MA1	
	$= \frac{1}{25}$	A1	2
		Total	**44**

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2010

Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

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.

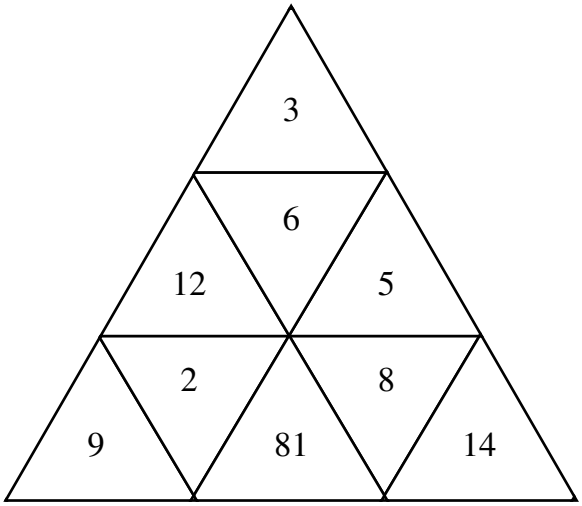
INFORMATION FOR CANDIDATES

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	

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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

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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

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3 The database shows information on cars for sale in a garage.

Make	Model	Style	Year	Mileage (miles)	Engine (ℓ)	Fuel	Doors	Price (£)
Toyota	Auris	Hatchback	2007	40 000	1.2	Petrol	3	3500
Vauxhall	Astra	Hatchback	2006	45 000	1.8	Diesel	5	3800
Honda	Civic	Hatchback	2008	20 000	1.6	Petrol	5	8200
Renault	Megane	Saloon	2005	65 000	1.8	Diesel	4	3000
Toyota	Corolla	Hatchback	2009	12 000	1.4	Diesel	3	7000
Renault	Laguna	Estate	2008	32 000	2.0	Diesel	5	7800
Vauxhall	Vectra	Estate	2006	51 000	1.8	Petrol	5	6400
Ford	Mondeo	Saloon	2008	37 000	2.2	Diesel	4	8200
Renault	Megane	Hatchback	2008	24 000	1.4	Petrol	3	6500
Ford	Fiesta	Hatchback	2005	64 000	1.4	Petrol	3	1800

Examiner Only	
Marks	Remark

(a) What is the price of the cheapest Renault?

Answer £ _____ [1]

(b) A man wishes to buy a 3 door Hatchback.
How many cars can he choose from?

Answer _____ [1]

(c) A woman has a maximum of £7000 to spend.
She wishes to buy a 2008 or 2009 petrol car.
Which is the only car available to her? Write down the Make, Model and Style.

Answer: Make _____

Model _____

Style _____ [1]

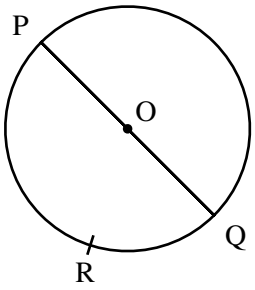
(d) What is the range in the price of the cars?

Answer £ _____ [1]

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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



© Tomas Castelazo

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?

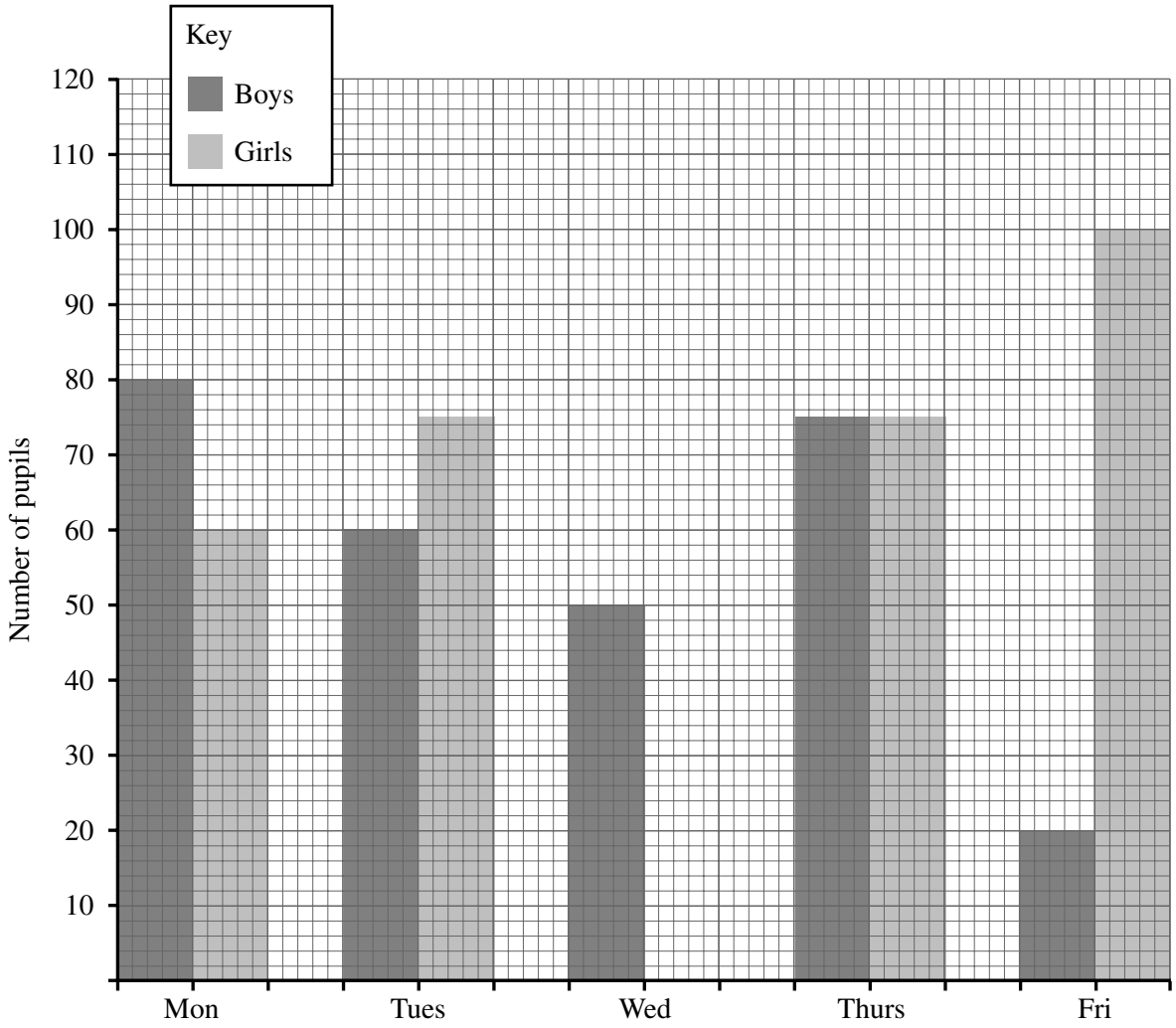
Answer _____ °C [1]

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

Answer _____ °C [1]

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



Examiner Only	
Marks	Remark

(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]

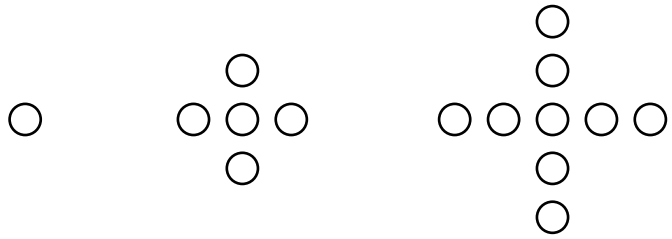
(c) The canteen manager states:
"Exactly 20% of those who used the canteen on Friday were boys."
Is this true? Explain your answer.

Answer _____ because _____

_____ [2]

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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

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

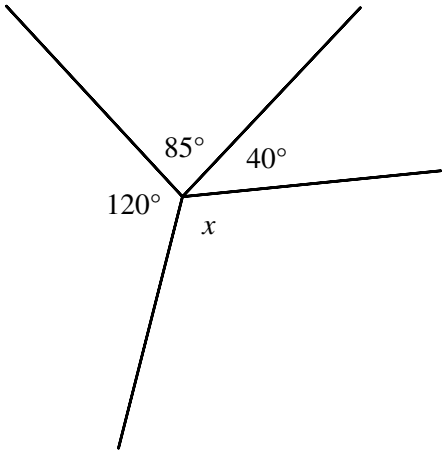
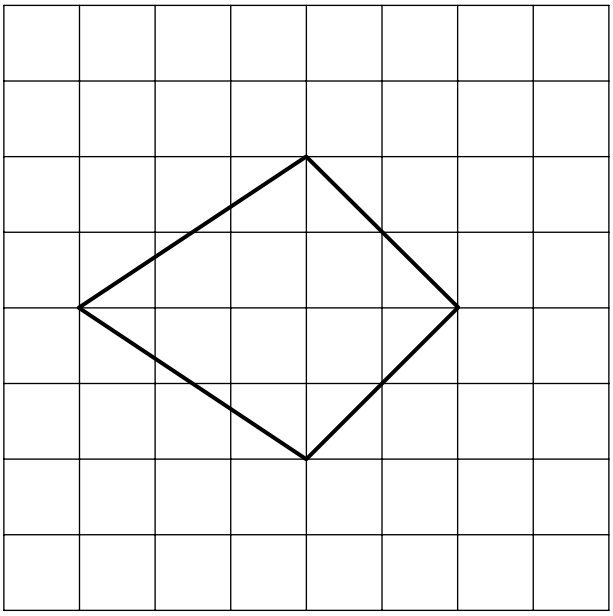


Diagram not drawn accurately

Answer _____° [2]

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



Answer _____ [2]

Examiner Only

Marks	Remark

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9 **(a)** Write down 50.6073 correct to 2 decimal places.

Answer _____ [1]

(b) Put these decimals in order with the smallest first.

0.29 0.289 0.3

Answer _____ [1]

10 Simplify $7\ell - 3m + 4m - \ell$

Answer _____ [2]

Examiner Only

Marks	Remark

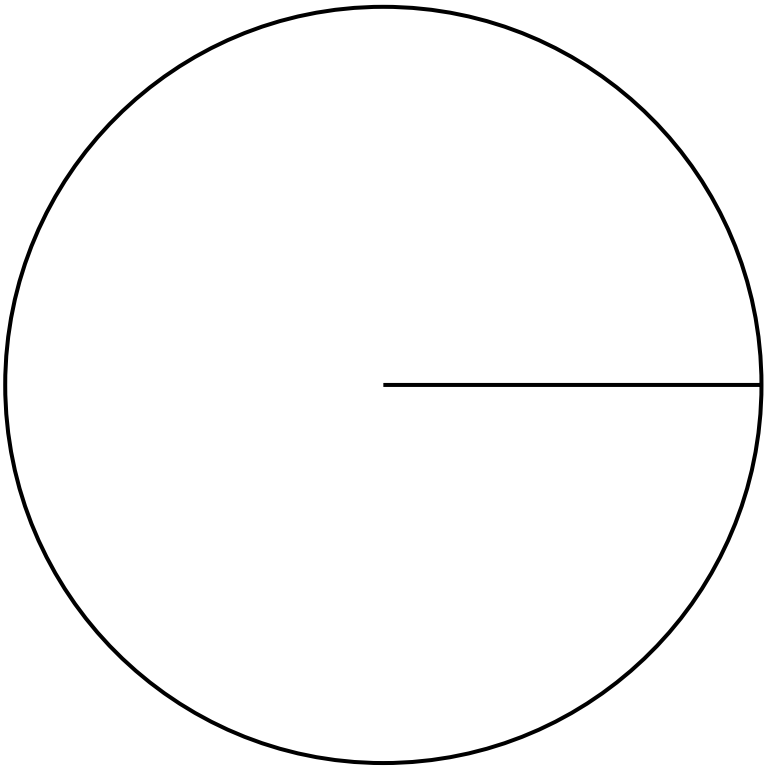
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Examiner Only	
Marks	Remark

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]

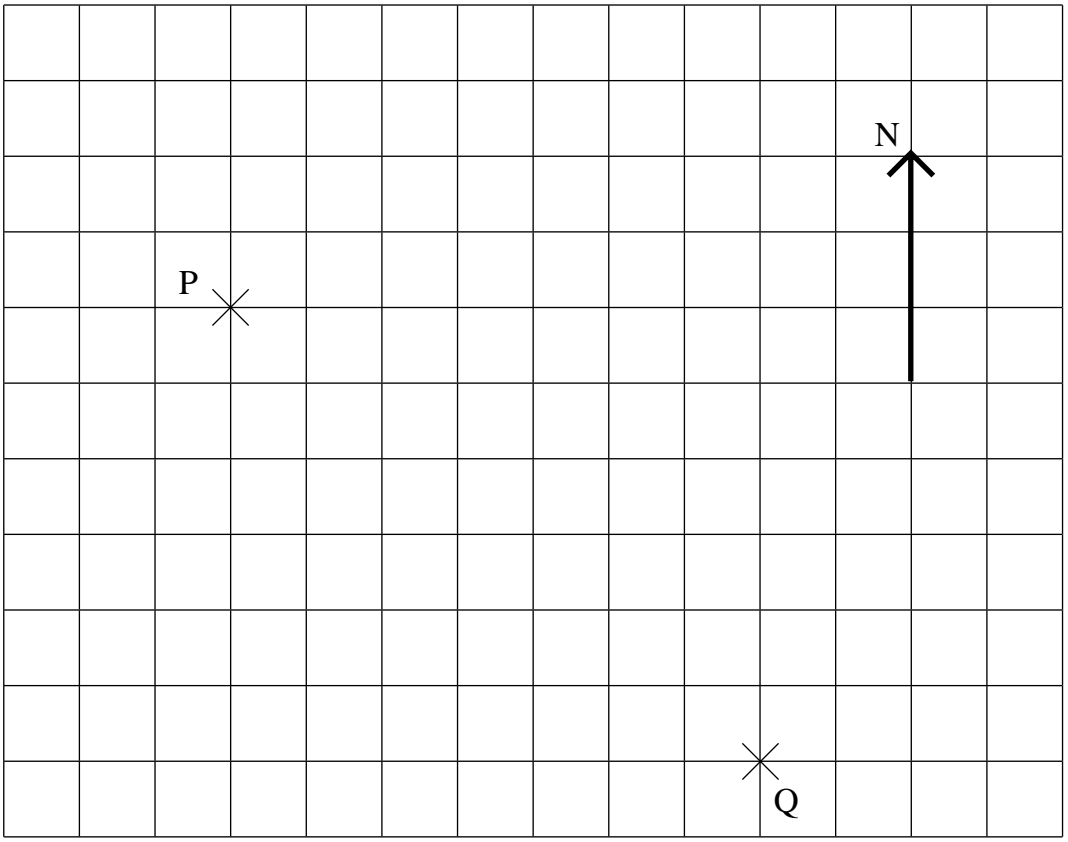
(b) Calculate $\frac{1}{3} \times \frac{2}{5}$

Answer _____ [1]

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

Examiner Only	
Marks	Remark



(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]

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1312-045-1

GCSE

Mathematics (Modular)

January 2010

Mark Schemes

Issued: April 2010

Rewarding Learning

General Certificate of Secondary Education
January 2010

Mathematics

Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

TUESDAY 12 JANUARY

9.15am – 10.00am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2010

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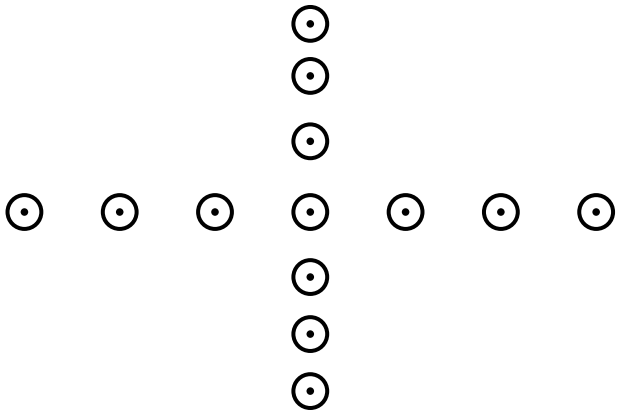
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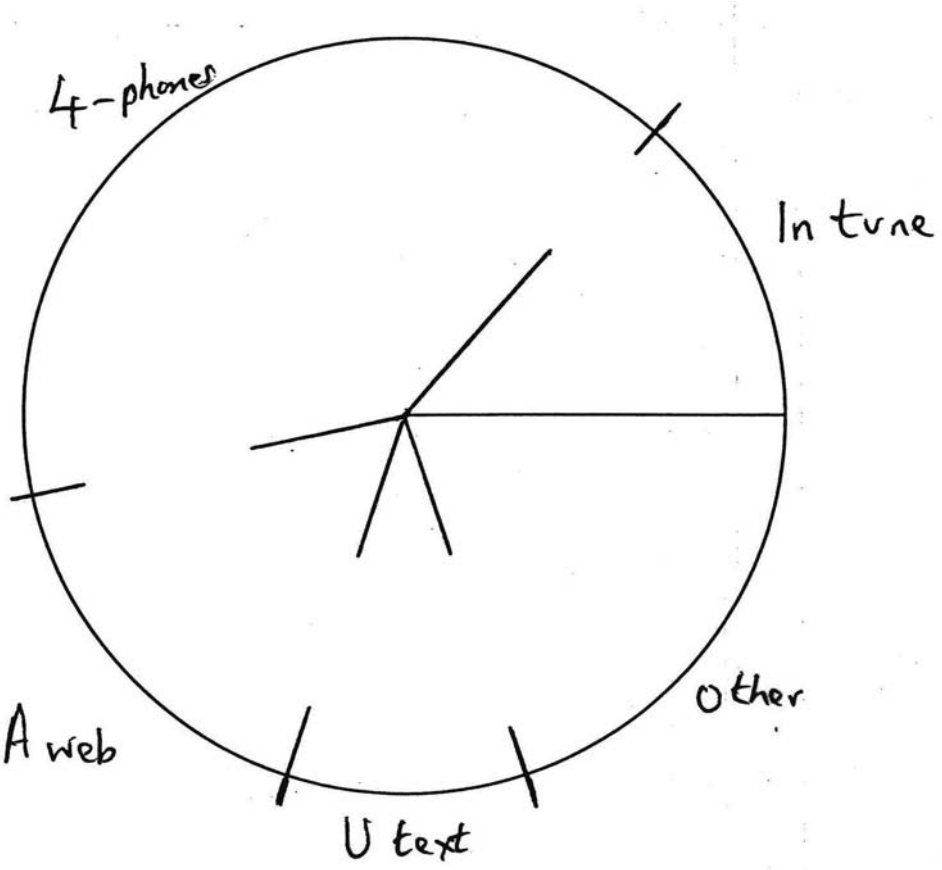
				AVAILABLE MARKS
1	**(a)**	3 and 5	A1	
	(b)	2 and 8	A1	
	(c)	14	A1	
	(d)	3	A1	4
2	**(a)**	46	A1	
	(b)	64 + 46 + 46 + 30 + 18		
		= 204	M1, A1	
	(c)	Floor 8 Reason given, e.g. larger rooms on this floor	A1	4
3	**(a)**	3000	A1	
	(b)	4	A1	
	(c)	Renault Megane Hatchback	A1	
	(d)	£8200 − £1800 = £6400	MA1	4
4	**(a)**	**(i)** Diameter	A1	
		(ii) Arc	A1	
	(b)	Correct line	A1	
	(c)	Correct point	A1	4
5	**(a)**	56	A1	
	(b)	−21	A1	2
6	**(a)**	Bar of height 65 drawn for girls on Wednesday	MA1	
	(b)	Thursday	A1	
	(c)	No, because 20% of 120 = 24, and on Friday there were only 20 boys (or similar explanation)	A2	4

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				AVAILABLE MARKS
7	**(a)**		A1	
	(b)	13, 17	A1	
	(c)	Add 4 to previous term	A1	3
8	**(a)**	120 + 85 + 40 = 245	MA1	
		360 – 245 = 115	MA1	
	(b)	10 cm^2	A1, A1 (units)	4
9	**(a)**	50.61	A1	
	(b)	0.289, 0.29, 0.3	A1	2
10		$6\ell + m$	A1, A1	2
11		Angles 48° 144° 60° 36° 72 Sectors	M1, A1 M1, A1	4
12	**(a)**	23 and 29	A2	
	(b)	$\frac{2}{15}$	A1	3
13	**(a)**	130 ± 2	A1	
	(b)	9.2 (± 0.2)	A1	
		9.2 × 5 = 46 (± 1)	M1, A1	4
			Total	**44**

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GCSE MATHEMATICS JANUARY 2010
MODULE N1-1
OVERLAY QUESTION 11



STEMUP.CO.UK

Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
2009

Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

GMN11

MONDAY 18 MAY

1.30 pm – 2.15 pm

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.

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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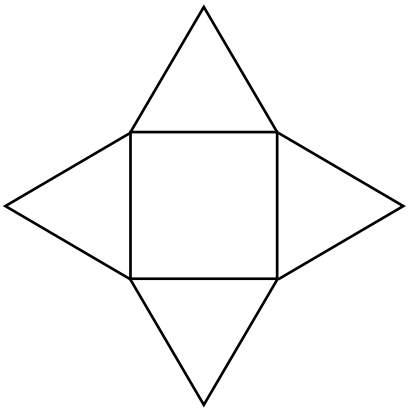
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Examiner Only	
Marks	Remark

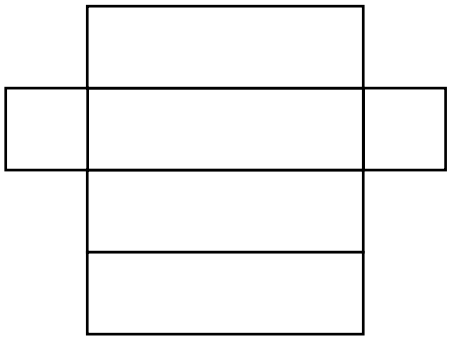
1 **(a)** The nets of two solids are shown below.
Name the solids, choosing from

cylinder **triangular based pyramid** **cone** **cuboid**

cube **square based pyramid**



Net A

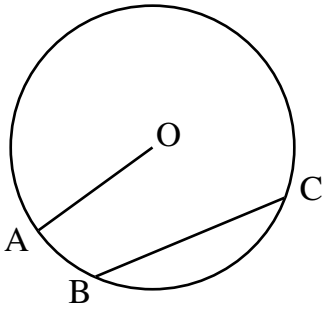


Net B

Answer Net A _____

Answer Net B _____ [2]

(b)



Complete the sentences below, choosing from

diameter **sector** **radius** **chord** **circumference** **segment**

O is the centre of the circle and A is a point on the _____ of the circle.

The line OA is the _____ of the circle.

The line BC is a _____ of the circle. [3]

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Examiner Only	
Marks	Remark

2 90 pupils were asked which of the following ice-cream flavours they liked best. The first three rows of the pictogram are drawn below.

Ice-cream flavour liked best

Strawberry 

Vanilla 

Honeycomb 

Chocolate

(a) 24 pupils liked Strawberry best.
Complete the key:

 = _____ pupils [1]

(b) How many pupils liked Honeycomb best?

Answer _____ [1]

(c) Complete the row of the pictogram for Chocolate. [2]

---

3 12 13 14 15 16 17 18

From the list of numbers write down

(a) the square number

Answer _____ [1]

(b) the multiple of 9

Answer _____ [1]

(c) the two numbers which are factors of 36

Answer _____ and _____ [1]

Examiner Only	
Marks	Remark

4 Look at the pattern of numbers below.

1
1 + 3
1 + 3 + 5
1 + 3 + 5 + 7

(a) Find the totals for the first 4 lines of this pattern.

Answer _____ , _____ , _____ , _____ [1]

(b) Write down the special name given to these totals.

Answer _____ [1]

---

5 **(a)** Work out 500 – 272

Answer _____ [2]

(b) Write 26 million in figures.

Answer _____ [1]

---

6 Show that the following numbers are in ascending order of size.

$28\%, \quad \frac{3}{10}, \quad 0.4$

[3]

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Examiner Only	
Marks	Remark

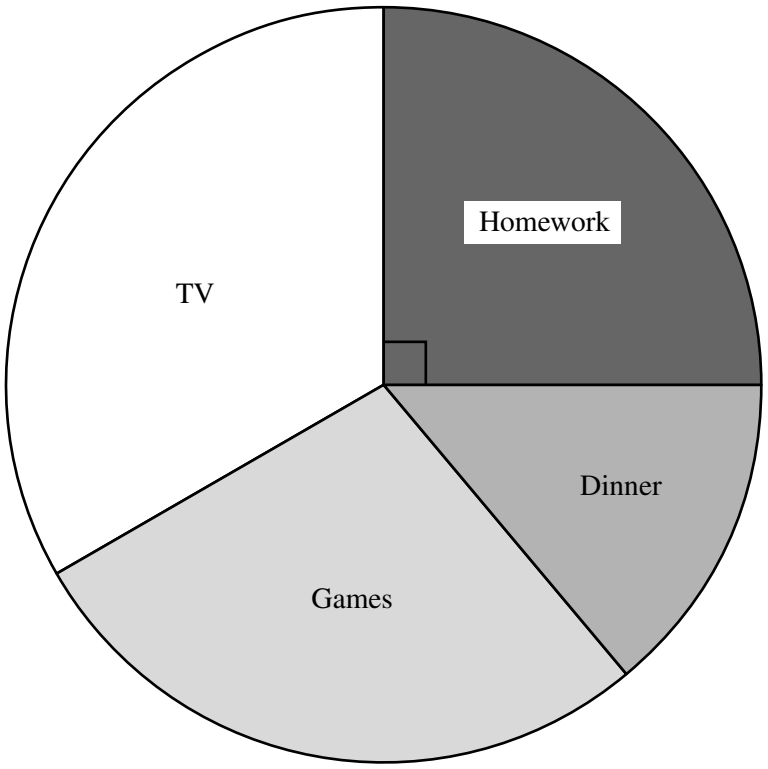
7 **(a)** The ages of some footballers are

25 15 27 18 24 17 21 18 18 17

What is the mean age of the footballers?

Answer _____ [3]

(b) The pie chart shows how Jason spent six hours at home one evening.



(i) How much time was spent doing homework?

Answer _____ hours [2]

(ii) Estimate the time spent watching TV.

Answer _____ hours [1]

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(iii) Measure the angle for playing games.

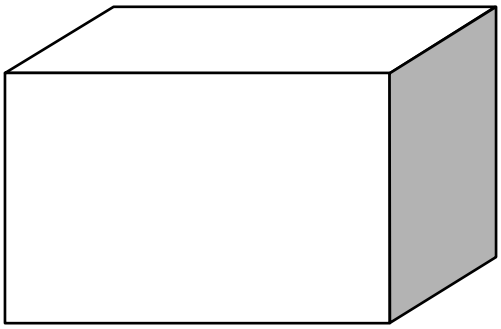
Answer _____° [1]

Examiner Only	
Marks	Remark

8 **(a)** A rectangle has length 6 cm and breadth 2 cm. Calculate its perimeter.

Answer _____ cm [1]

(b) **(i)**



Calculate the volume of the cuboid which has a length 15 cm, breadth 10 cm and height 12 cm.

Answer _____ [3]

(ii) Another cuboid has volume 120 cm^3.
The length of the cuboid is 8 cm. The breadth is 5 cm.
Find the height of the cuboid.

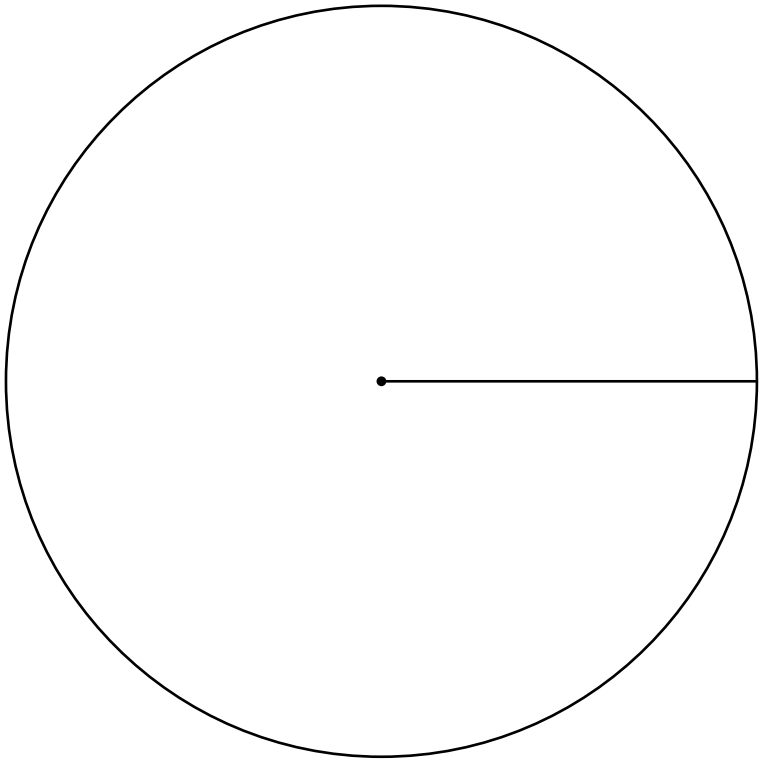
Answer _____ cm [2]

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9 During a short period the colours of cars passing a school were noted. The results were as follows

Blue	15
Green	10
White	9
Black	5
Red	21

Draw a pie chart to illustrate this information.



[4]

Examiner Only	
Marks	Remark

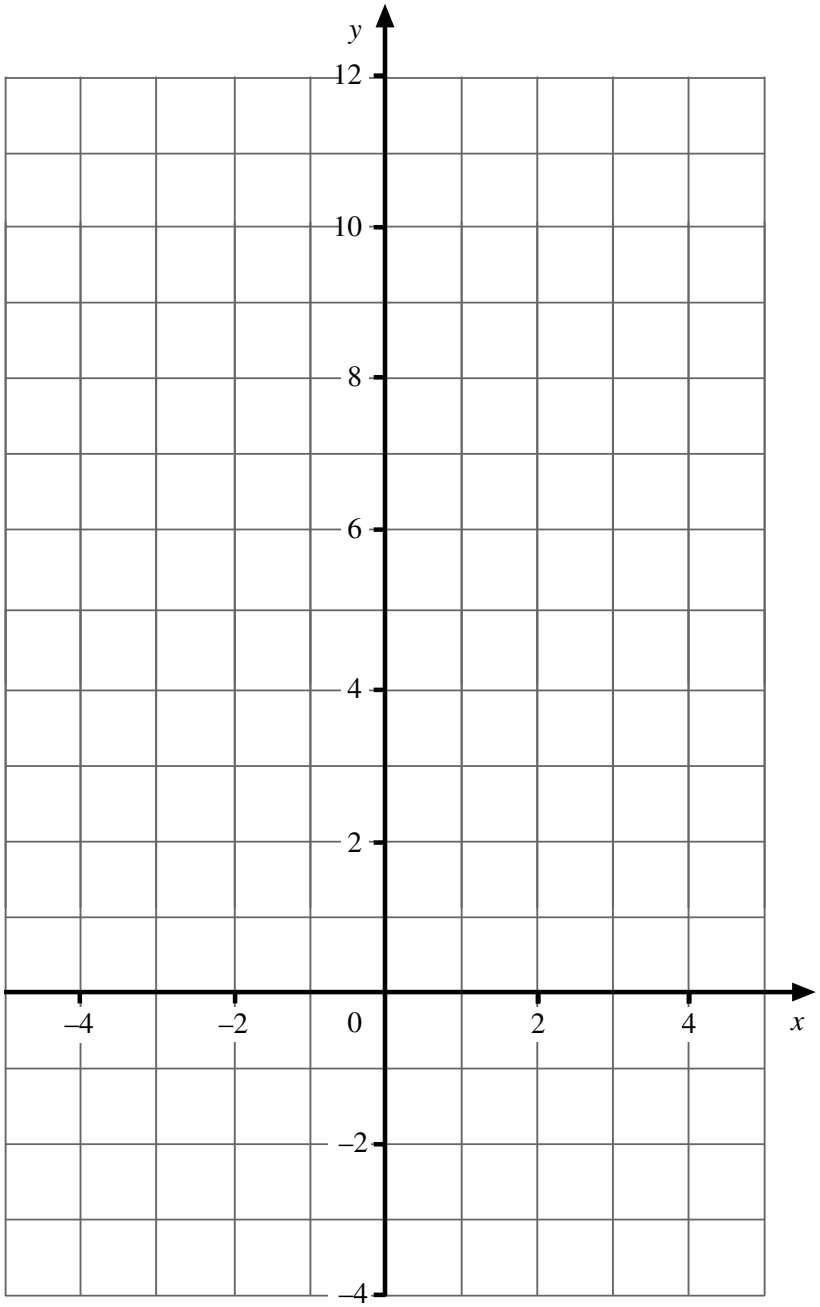
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10 **(a)** Complete the table for $y = 3x - 1$

x	–1	1	3	4
$y = 3x - 1$		2	8	11

[1]

(b) Hence draw the graph of $y = 3x - 1$



[2]

Examiner Only

Marks	Remark

11 **(a)** Calculate $5^2 \times 2^3$

Examiner Only	
Marks	Remark

Answer _____ [2]

(b) Write $\frac{7}{8}$ as a percentage.

Answer _____% [2]

THIS IS THE END OF THE QUESTION PAPER

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GCSE

Mathematics (Modular)

Summer 2009

Mark Schemes

Issued: October 2009

Rewarding Learning

General Certificate of Secondary Education

Summer 2009

Mathematics

Module N1 Paper 1

(Non-calculator)

Foundation Tier

[GMN11]

MONDAY 18 MAY

1.30 pm – 2.15 pm

MARK SCHEME

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GCSE MATHEMATICS 2009

Introduction

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It should be noted that where an error trivialises a question, or changes the nature of the skills being tested, then as a general rule, it would be the case that not more than half the marks for that question or part of that question would be awarded; in some cases the error may be such that no marks would be awarded.

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(a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;

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When the candidate misreads a question in such a way as to make the question easier only a proportion of the marks will be available (based on the professional judgement of the examiner).

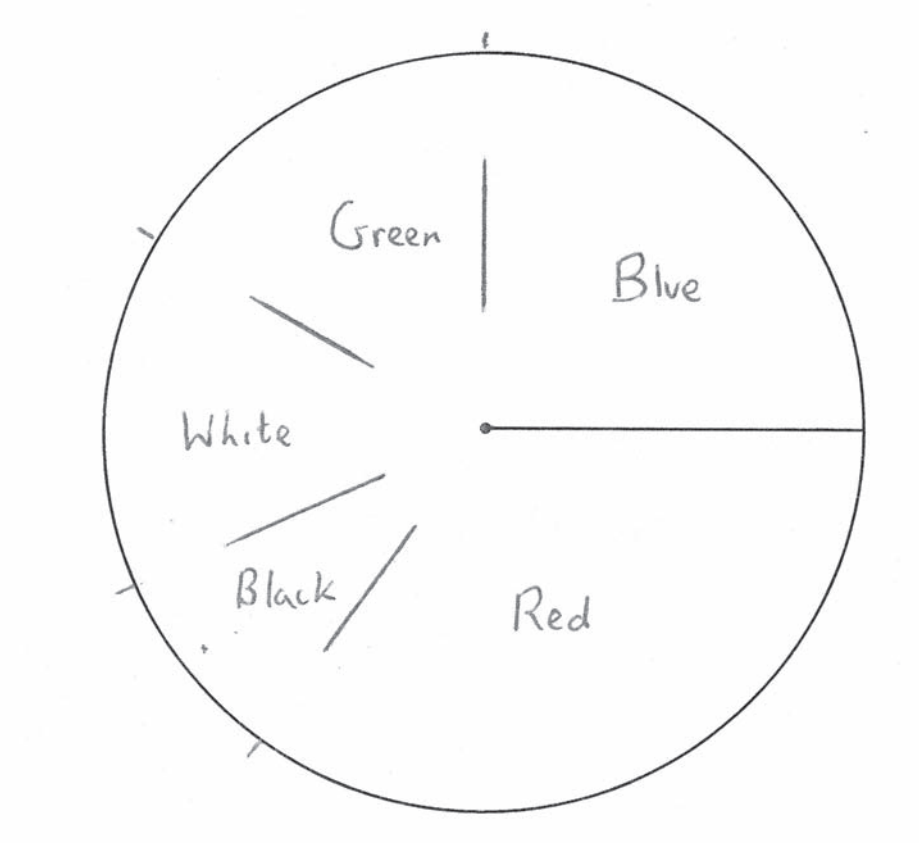
			AVAILABLE MARKS
1	**(a)** Square based pyramid, cuboid	A1, A1	
	(b) circumference, radius, chord	A1, A1, A1	5
2	**(a)** 6	A1	
	(b) 36	A1	
	(c) 3 cones drawn	M1, A1	4
3	**(a)** 16	A1	
	(b) 18	A1	
	(c) 12 and 18	A1	3
4	**(a)** 1, 4, 9, 16	A1	
	(b) Square numbers	A1	2
5	**(a)** 500 – 272 = 228	M1, A1	
	(b) 26 000 000	A1	3
6	28% = 0.28	MA1	
	$\frac{3}{10} = 0.3$	MA1	
	0.28, $\frac{3}{10}$, 0.4 are in correct order	MA1	3
7	**(a)** 200/10	M1, A1	
	20	A1	
	(b) **(i)** 1.5 hours	A2	
	(ii) 2 hours (allow 15 mins tolerance)	A1	
	(iii) 100 degrees (allow 2 degrees tolerance)	A1	7

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			AVAILABLE MARKS
8	**(a)** 16	A1	
	(b) **(i)** $15 \times 10 \times 12 = 1800\,\text{cm}^3$	M1, A1, A1 (units)	
	(ii) $\frac{120}{(8 \times 5)} = 3$	M1, A1	6
9	See overlay		
	90°, 60°, 54°, 30°, 126°	A2	
	(award one mark for evidence of 60 or 6)		
	All sectors correct and labelled	A2	4
10	**(a)** –4	A1	
	(b) graph	M1, A1	3
11	**(a)** $25 \times 8 = 200$	A1, A1	
	(b) $\frac{7}{8} \times 100 = \frac{700}{8}$	MA1	
	$= 87\frac{1}{2}$	MA1	4
		Total	**44**

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GCSE MATHEMATICS SUMMER 2009
MODULE N1-1
OVERLAY QUESTION 9



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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2009

Mathematics



Module N1 Paper 1
(Non-calculator)
Foundation Tier

[GMN11]

GMN11

FRIDAY 9 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 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.

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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Examiner Only	
Marks	Remark

1 **(a)** The day of the month on which pupils in a year 12 group were born was recorded.
The results are shown below.

29	26	15	1	3	8	17	21	9	8
22	18	14	4	3	7	28	30	2	10
13	9	12	5	8	17	31	6	10	4

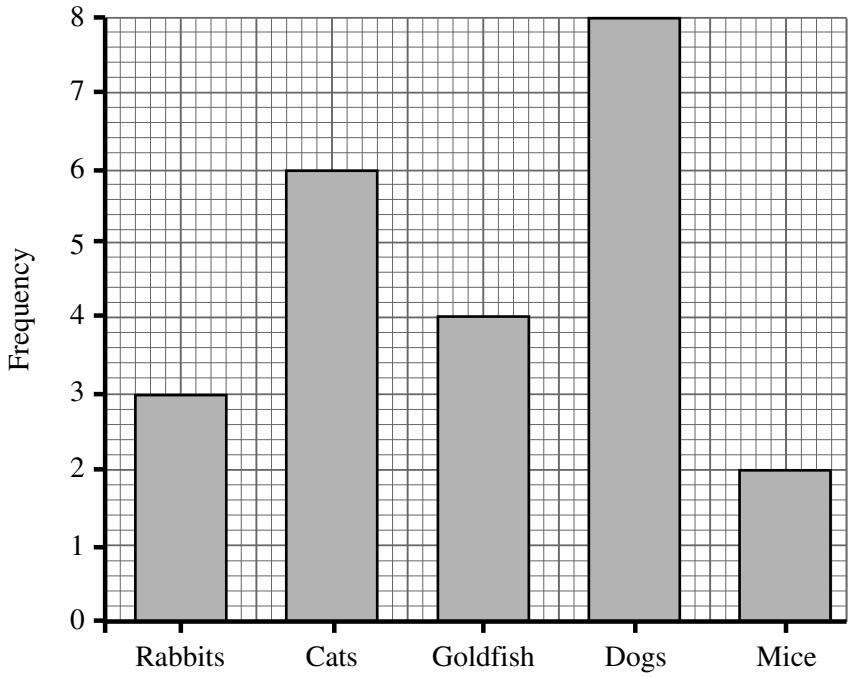
Complete the frequency table.

Born	Tally (if required)	Frequency
1st to 5th		
6th to 10th		
11th to 15th		
16th to 20th		
21st to 25th		
26th to 31st		

[2]

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(b)



The bar graph shows the distribution of pets kept by children in a year 8 class.

How many

(i) goldfish were there,

Answer _____ [1]

(ii) pets were there in total?

Answer _____ [2]

Examiner Only	
Marks	Remark

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2

65	34	12	61	46
18	56	80	25	63

Examiner Only

Marks	Remark

(a) **From the numbers in the grid**, write down

(i) two numbers with a total of 80,

Answer _____ , _____ [1]

(ii) two numbers with a difference of 40,

Answer _____ , _____ [1]

(iii) two factors of 36,

Answer _____ , _____ [1]

(iv) a square number.

Answer _____ [1]

(b) What is the highest number you can get by multiplying any two numbers in the grid?

Answer _____ [2]

Examiner Only	
Marks	Remark

3 **(a)** **(i)** Draw a circle of radius 4 cm.

[1]

(ii) Draw a chord of the circle. [1]

(b) **(i)** Draw a quadrilateral with only one pair of parallel lines, in the space below.

[1]

(ii) What is the special name given to this quadrilateral?

Answer _____ [1]

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Examiner Only	
Marks	Remark

4 Find the median of the following numbers

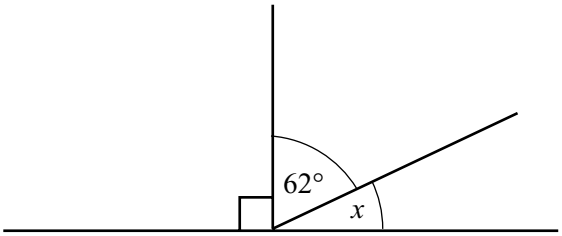
13 4 5 21 24 18 2 9 5 15 3 11 16 23 8 20

Answer _____ [2]

---

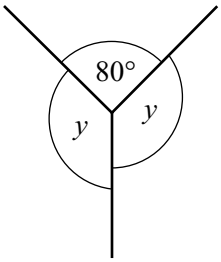
5 Calculate

(a) angle x



Answer x = _____° [1]

(b) angle y



Answer y = _____° [1]

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6 **(a)** Calculate

Examiner Only	
Marks	Remark

(i) $272 \div 8$

Answer _____ [1]

(ii) $\frac{3}{7} \times 56$

Answer _____ [2]

(iii) 0.5×0.3

Answer _____ [1]

(iv) $\frac{3}{8} - \frac{1}{4}$

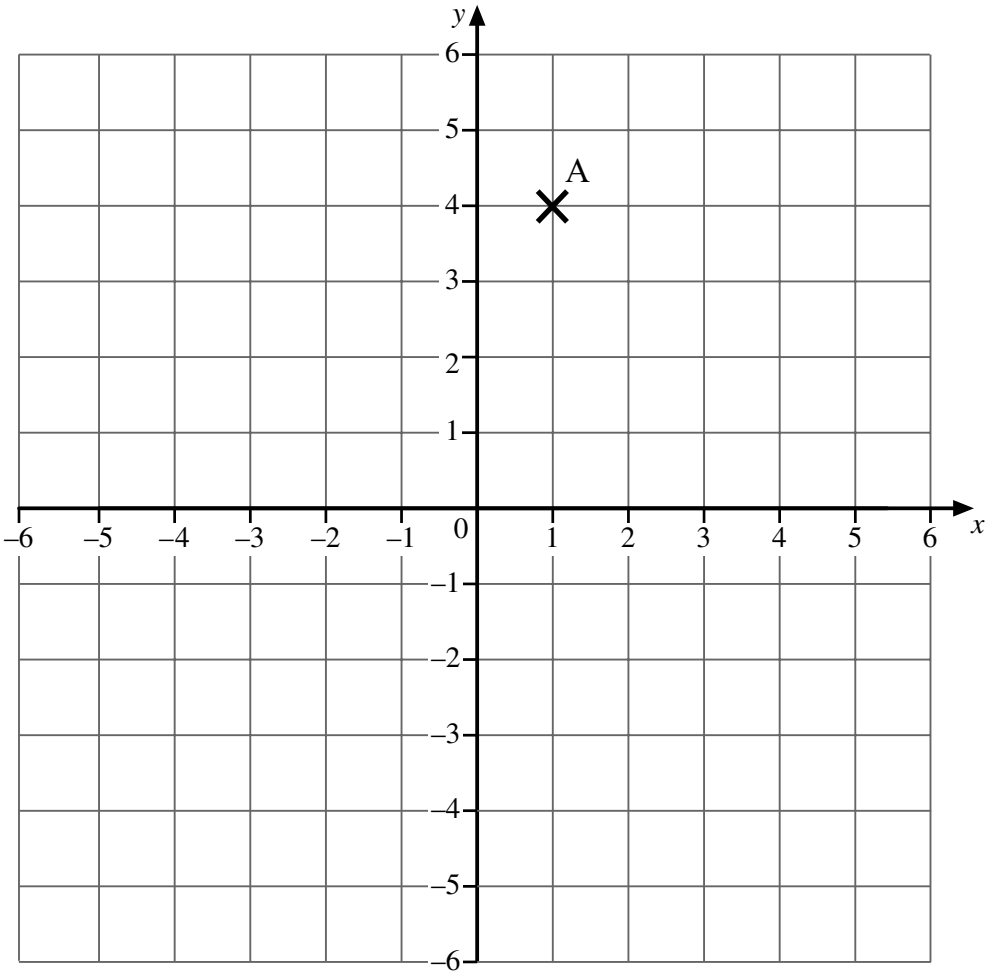
Answer _____ [2]

(b) Write down $\sqrt{64}$

Answer _____ [1]

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7



(a) Write down the coordinates of the point marked A.

Answer (_____ , _____) [1]

(b) Plot on the grid the point (–4, 0). [1]

(c) Draw on the grid the line $x = 3$ [1]

Examiner Only	
Marks	Remark

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8 **(a)** Find the value of $5x - 2y$ when $x = -2$ and $y = 4$

Answer _____ [2]

(b) Solve the equations

(i) $9x = 27$

Answer x = _____ [1]

(ii) $\frac{y}{3} = 6$

Answer y = _____ [1]

(iii) $\frac{18}{z} = 3$

Answer z = _____ [1]

Examiner Only	
Marks	Remark

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9 The stem and leaf diagram represents the heights of 21 students in a year 8 class.

Stem	Leaf
13	6 9
14	1 2 3 3 4
14	5 6 7 7 8 8 9
15	1 2 4 4
15	5 8
16	2

Key: 13 | 6 means 136 cm

Write down

(a) the range of the data,

Answer _____ cm [1]

(b) the median of the data.

Answer _____ cm [1]

Examiner Only	
Marks	Remark

10 **(a)** Construct the triangle ABC with AB = 7 cm, BC = 4 cm and AC = 5 cm.
Do not rub out your construction lines.

[3]

(b) Measure the size of angle CAB.

Answer _____° [1]

Examiner Only	
Marks	Remark

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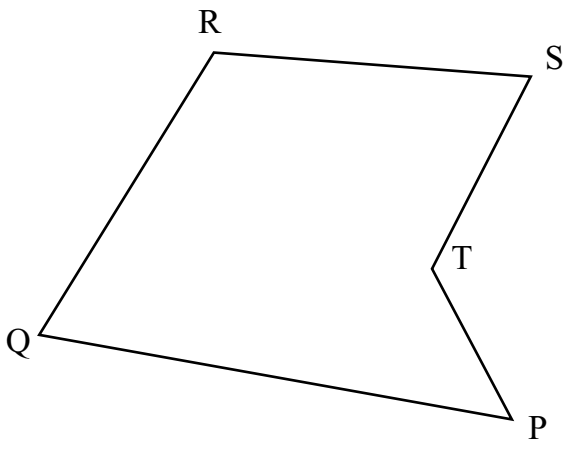
11 **(a)** Calculate 40% of 60

Answer _____ [2]

(b) Work out 6.2 – 2.73

Answer _____ [1]

(c) Mark a reflex angle in the shape shown.



[1]

Examiner Only	
Marks	Remark

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THIS IS THE END OF THE QUESTION PAPER

GCSE

Mathematics (Modular)

January 2009

Mark Schemes

Issued: April 2009

Rewarding Learning

General Certificate of Secondary Education

January 2009

Mathematics

Module N1 Paper 1

(With calculator)

Foundation Tier

[GMN11]

FRIDAY 9 JANUARY

9.15 am – 10.00 am

MARK SCHEME

STEMUP.CO.UK

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				AVAILABLE MARKS
1	**(a)**	7, 9, 4, 3, 2, 5 A1 for 3 frequencies correct	A2	
	(b)	**(i)** 4	MA1	
		(ii) 3 + 6 + 4 + 8 + 2 = 23	M1, A1	5
2	**(a)**	**(i)** 34, 46	A1	
		(ii) 65, 25	A1	
		(iii) 12, 18	A1	
		(iv) 25	A1	
	(b)	80×65	MA1	
		5200	A1	6
3	**(a)**	**(i)** See overlay circle drawn with radius 4 cm (±0.2)	A1	
		(ii) chord correctly drawn	A1	
	(b)	**(i)** any quadrilatral with 1 pair of parallel sides	A1	
		(ii) trapezium	A1	4
4	Arranged in order		M1	
	$\frac{(11 + 13)}{2} = 12$		A1	2
5	**(a)**	28°	MA1	
	(b)	140°	MA1	2
6	**(a)**	**(i)** 34	A1	
		(ii) 24	A2	
		(iii) 0.15	A1	
		(iv) $\frac{1}{8}$	A2	
	(b)	8	A1	7

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				AVAILABLE MARKS
7	**(a)**	(1, 4)	A1	
	(b)	Point plotted correctly at (–4, 0)	A1	
	(c)	Line $x = 3$ drawn correctly	A1	3
8	**(a)**	$5(-2) - 2(4)$ $= -10 - 8$ $= -18$	 M1 A1	
	(b)	**(i)** $x = 3$	A1	
		(ii) $y = 18$	A1	
		(iii) $z = 6$	A1	5
9	**(a)**	26	MA1	
	(b)	147	MA1	2
10	**(a)**	See overlay MA1 for each correct side	 MA3	
	(b)	34° (±2°)	A1	4
11	**(a)**	$0.4 \times 60 = 24$	M1, A1	
	(b)	3.47	A1	
	(c)	angle marked	A1	4
			Total	**44**

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GCSE MATHEMATICS JANUARY 2009
MODULE N1-1
OVERLAY QUESTION 3



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GCSE MATHEMATICS JANUARY 2009
MODULE N1-1
OVERLAY QUESTION 10

