CCEA GCSE MATHEMATICS (MODULAR)

MATHS



EXAM QUESTION PACK

MODULE N1 PAPER 2 (CALCULATOR) FOUNDATION TIER GMN12 PAPERS

STEMUP

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Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics

Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

WEDNESDAY 11 JANUARY

10.30 am – 11.15 am

GMN12

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

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

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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Examiner Only	
Marks	Remark

1 Write down the next term of the sequence

25, 19, 13, 7, ...

Answer _____ [1]

---

2 Tim Jackson visited a shop called "Music Mania."

He bought 3 CDs at £7.99 each and 2 DVDs at £8.50 each.

(a) Calculate his total bill.

Answer £ _____ [2]

(b) Tim paid by cheque.

Complete the cheque below.

STAR Bank

Town Square, Leyland Branch
1 Town Square, Leyland, Lancashire, PR4 0WN

25-08-92

Date 04/01/12

Pay

£

Amount

A/C Payee

Tim Jackson

Bank plc
10JUL00

Mr Tim Jackson

Cheque No.	Branch No.	Account No.	Trans. Code
000121	29II0892	0403392	01

[2]

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3 Thirteen students had the following number of books in their bags.

3, 8, 4, 3, 6, 5, 9, 3, 7, 4, 3, 5, 6

(a) What is the median number of books?

Answer _____ books [2]

(b) What is the mode of the number of books?

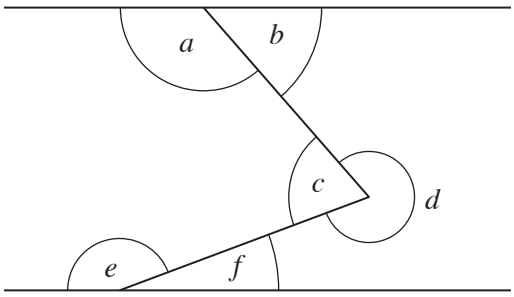
Answer _____ books [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

4 (a)



From the diagram, write down a letter for an angle which is

(i) acute, Answer _____ [1]

(ii) obtuse, Answer _____ [1]

(iii) reflex. Answer _____ [1]

(b) (i) Using the point marked "C" as the centre, draw a circle with a radius of 3.5 cm.

C •

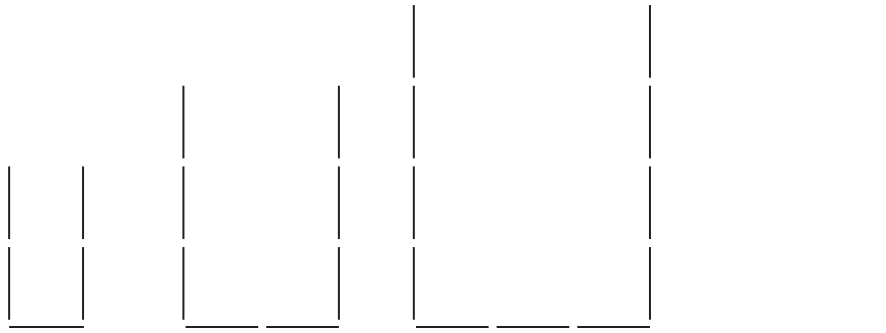
[1]

(ii) Draw a diameter on this circle. [1]

(iii) Draw any chord parallel to your diameter. [1]

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5 Some "U" shapes drawn below are made with matches.



Shape 1 Shape 2 Shape 3 Shape 4

(a) Draw Shape 4. [1]

Shape Number	1	2	3	4	5
Number of Matches	5	8	11		

(b) Complete the table for Shapes 4 and 5. [1]

(c) What pattern do you notice in the "Number of Matches" row?

Answer _____ [1]

(d) Find the number of matches in Shape 10.

Answer _____ [2]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

6 **(a)** There are 10 students on a school bus.

Their ages in years are 12, 15, 13, 17, 10, 14, 16, 15, 16, 11

What is the mean age of the 10 students?

Answer _____ years [3]

(b)

Ayr						
90	Carlisle					
73	96	Edinburgh				
132	196	144	Fort William			
33	96	44	160	Glasgow		
94	136	45	105	61	Perth	
51	101	124	184	84	144	Stranraer

Mileages

(i) John travels from Carlisle to Perth. What distance does he travel?

Answer _____ miles [1]

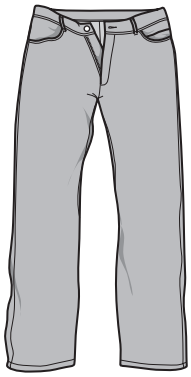
(ii) Mark travels from Carlisle to Glasgow and then on to Perth.

How many more miles does Mark travel than John?

Answer _____ miles [2]

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7



JEANS – $\frac{1}{3}$ OFF TAG PRICE



SHIRTS – 15% OFF TAG PRICE

Jim buys jeans and a shirt in the sale.
The price tag on the jeans is £54.
The price tag on the shirt is £28.
What is the total cost of his items in the sale?

Answer £ _____ [4]

Examiner Only	
Marks	Remark

8 The shoe sizes for 18 pupils in a class are recorded in the frequency table below.

Shoe size	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7	$7\frac{1}{2}$	8	$8\frac{1}{2}$	9
Number of pupils	1	0	5	4	4	2	1	0	1	0

(a) Write down the modal shoe size.

Answer _____ [1]

(b) Work out the range of these pupils' shoe sizes.

Answer _____ [1]

Examiner Only	
Marks	Remark

9 Each student in Year 10 studies one language (French, Spanish or German).

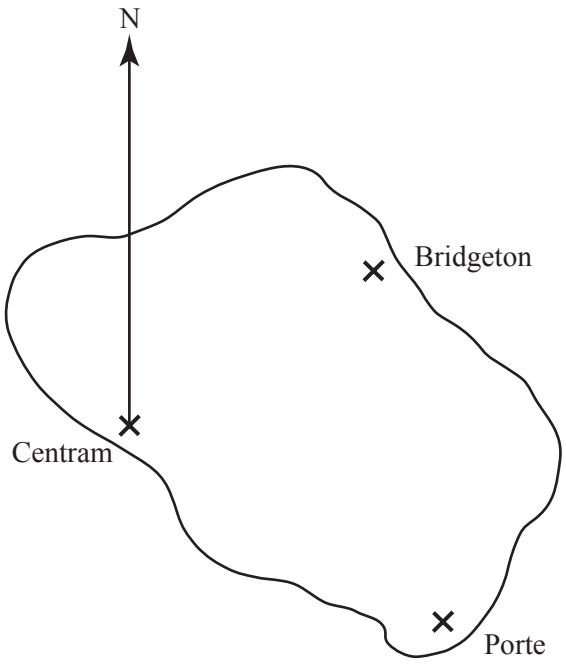
There are 135 students in Year 10.

Two-fifths study French, one-third study Spanish and the rest study German.

How many students study German?

Answer _____ [4]

10



(a) Write down the bearing of Bridgeton from Centram.

Answer _____ ° [1]

(b) Write down the bearing of Porte from Centram.

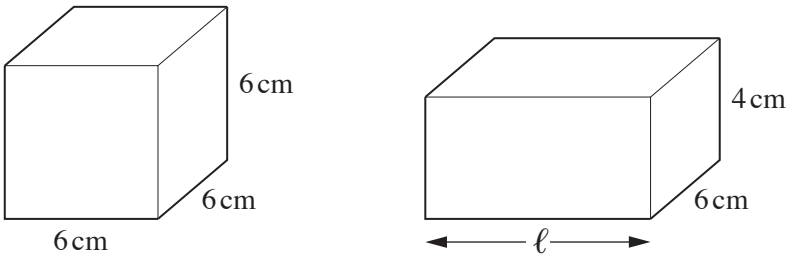
Answer _____ ° [1]

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Examiner Only	
Marks	Remark

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

What is the missing length marked ℓ on the cuboid?



Answer _____ [3]

12 **(a)** Calculate

$$\frac{1}{2.5^2}$$

Give your answer as a **decimal**.

Answer _____ [2]

(b) Which of the following fractions is nearest in size to $\frac{3}{5}$?
Show your working.

$\frac{7}{10}$ $\frac{11}{20}$ $\frac{17}{30}$ $\frac{1}{2}$

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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January 2012

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(With calculator)
Foundation Tier

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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;

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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).

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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	1		A1	1
2	**(a)** $3 \times 7.99 + 2 \times 8.50$		M1	
	$= 40.97$		A1	
	(b) Cheque details completed	A2 (A1 for 2 of 3 parts completed)		4
3	**(a)** 3, 3, 3, 3, 4, 4, 5, 5, 6, 6, 7, 8, 9		MA1	
	5		A1	
	(b) 3		A1	3
4	**(a)** **(i)** one from angles *f*, *b* or *c*		A1	
	(ii) either angle *a* **or** *e*		A1	
	(iii) angle *d*		A1	
	(b) **(i)** circle with radius 3.5 cm drawn correctly		MA1	
	(ii) diameter drawn		MA1	
	(iii) a chord drawn parallel to the diameter		MA1	6
5	**(a)** correct shape		A1	
	(b) 14, 17		A1	
	(c) add 3 (each time)		A1	
	(d) 32		M1, A1	5
6	**(a)** $(12 + 15 + 13 + 17 + 10 + 14 + 16 + 15 + 16 + 11) \div 10$		M1	
	$139 \div 10$		MA1	
	13.9		A1	
	(b) **(i)** 136		A1	
	(ii) $96 + 61 = 157$		MA1	
	$157 - 136 = 21$		A1	6

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			AVAILABLE MARKS
7	$\frac{1}{3}$ of £54 = £18 £54 – £18 = £36	MA1, MA1	
	15% of £28 = £4.20		
	£28 – £4.20 = £23.80	MA1	
	£36 + £23.80 = £59.80	MA1	4
8	**(a)** $5\frac{1}{2}$	A1	
	(b) 4	A1	2
9	$\frac{2}{5}$ of 135 = 54	MA1	
	$\frac{1}{3}$ of 135 = 45	MA1	
	54 + 45 = 99	A1	
	135 – 99 = 36	A1	4
10	**(a)** bearing ±2°	A1	
	(b) bearing ±2°	A1	2
11	$6 \times 6 \times 6 = 216$	MA1	
	$4 \times 6 \times \ell = 24\ell$		
	$24\ell = 216$ $\ell = 9$ cm	MA1, A1 (units)	3
12	**(a)** $\frac{1}{6.25}$ **or** $\frac{4}{25}$	A1	
	0.16	A1	
	(b) $\frac{42}{60}$, $\frac{33}{60}$, $\frac{34}{60}$, $\frac{30}{60}$ **or** 0.7, 0.55, 0.566 ..., 0.5	M1	
	$\frac{17}{30}$	A1	4
		Total	**44**

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GCSE MATHEMATICS JANUARY 2012
MODULE N1–2
OVERLAY QUESTION 4B



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Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
2011

Mathematics



Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

TUESDAY 31 MAY

10.30 am – 11.15 am

GMN12

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all twelve** questions.
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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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Examiner Only	
Marks	Remark

1 (a)



The triangle is divided into 9 equal parts.

Write down, **in its simplest form**, the fraction of the triangle which is **shaded**.

Answer _____ [2]

(b) Write $\frac{2}{5}$ as a percentage.

Answer _____ % [1]

(c) Write 5634 to the nearest 100

Answer _____ [1]

(d) Write down the two fractions from this list which are **not** equal to $\frac{3}{4}$

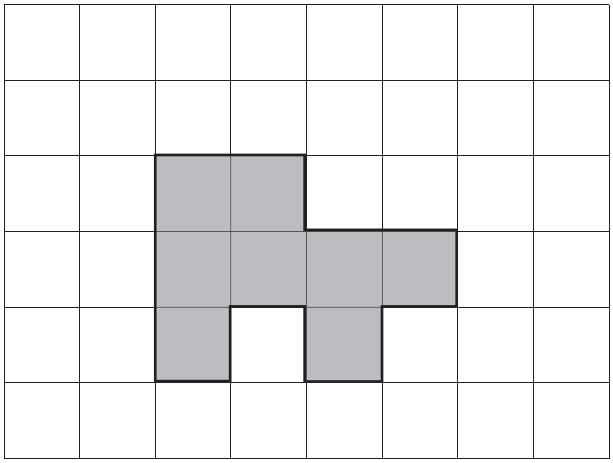
$$\frac{9}{12} \quad \frac{15}{20} \quad \frac{3}{12} \quad \frac{12}{16} \quad \frac{15}{25}$$

Answer _____ , _____ [2]

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Examiner Only	
Marks	Remark

2 **(a)** A shape is drawn on a centimetre square grid.



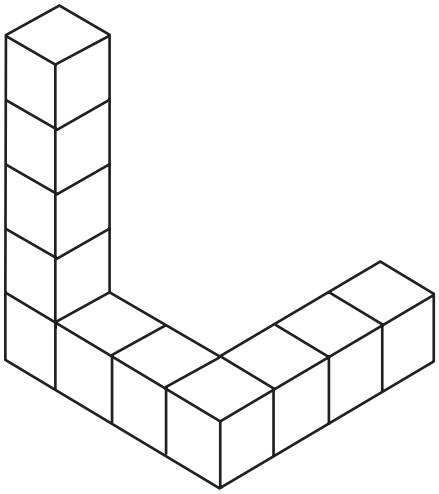
(i) Work out the perimeter of the shape above.

Answer _____ cm [1]

(ii) Work out the area of the shape above.

Answer _____ cm^2 [1]

(b) This solid is made of centimetre cubes.



What is the volume of this solid?

Answer _____ [2]

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Examiner Only	
Marks	Remark

3 The following scores were obtained in a test.

8, 5, 9, 6, 4, 7, 9, 8, 5, 7, 8, 6, 8, 7, 6

Find

(a) the median,

Answer _____ [2]

(b) the mode.

Answer _____ [1]

---

4 **(a)** Write down the number forty-one thousand and twenty-two in figures.

Answer _____ [1]

(b) Calculate $\sqrt{2.25}$

Answer _____ [1]

(c) Write down the largest of these three numbers.

0.4677 0.462 0.47

Answer _____ [1]

(d) Write 72.06619 correct to two decimal places.

Answer _____ [1]

(e) Write 23.35 correct to three significant figures.

Answer _____ [1]

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5 Look at the pattern of squares and triangles.

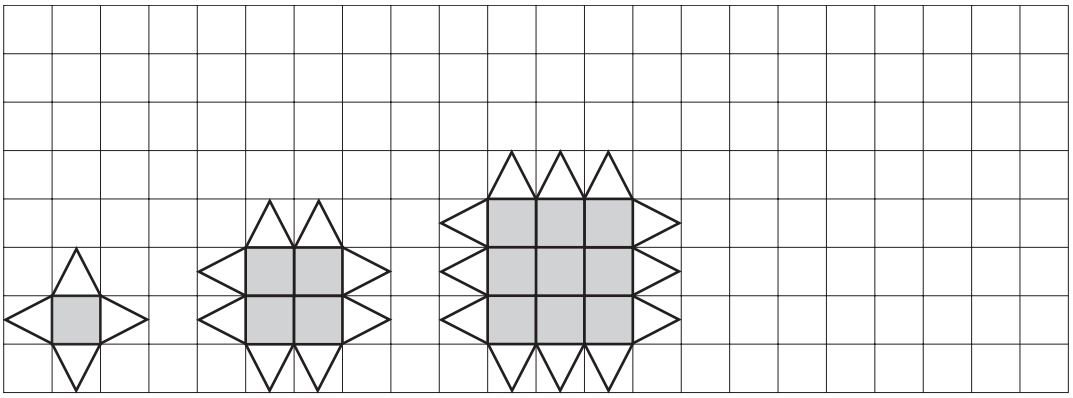


Diagram 1 Diagram 2 Diagram 3 Diagram 4

(a) On the grid, draw Diagram 4 [1]

(b) Complete the table below.

Diagram	**1**	**2**	**3**	**4**	**5**
Number of squares	1	4	9		
Number of triangles	4	8	12		

[2]

(c) If the pattern was continued one diagram would have 64 squares. How many triangles would be in that diagram?

Answer _____ [2]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

6 The number of boys attending football practice each week was recorded.

23 13 25 16 22 15 19 16 15 16

What was the mean number of boys?

Answer _____ [3]

---

7 Renee has £20 to buy as many pens as possible at 35p each.

(a) How many pens can she buy?

Answer _____ [2]

(b) How much change should she get?

Answer _____ p [1]

8 Here is a **sketch** of a triangular field.

The side AB is 220 m long, the side AC is 120 m long and the angle BAC is 50°.

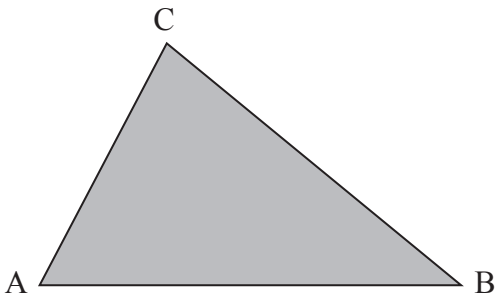


Diagram not drawn accurately

(a) Using a scale of 1 cm = 20 m, make an accurate scale drawing of the field. The line AB has already been drawn for you.

A ——————————————————— B

220 m

[2]

(b) Use your scale drawing to find the size of the angle ACB.

Answer _____° [1]

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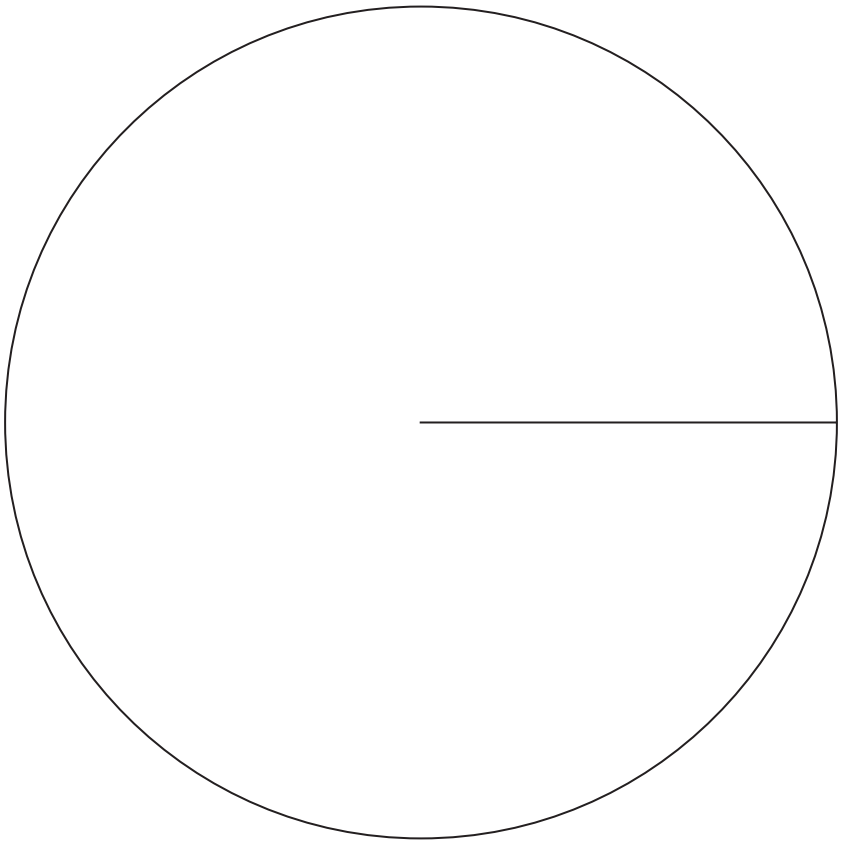
Marks	Remark

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9 The number of buns sold in a bakery was recorded as follows.

Cream	16
Fruit	10
Jam	9
Chocolate	25

Draw a pie chart to illustrate this information.



[4]

10 Simplify $8x - 3 - 2x + 5$

Answer _____ [2]

Examiner Only

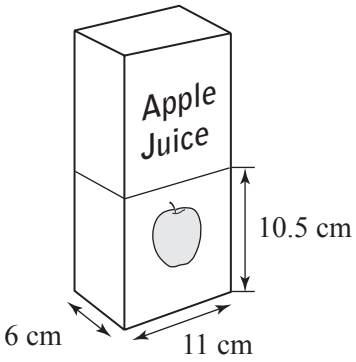
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11 **(a)** A rectangular carton holds apple juice. The base of the carton has dimensions of 6 cm and 11 cm. The height of the juice in the carton is 10.5 cm above the base (1 cm^3 = 1 ml).

What is the volume of juice left in the carton in millilitres?



Answer _____ ml [2]

(b) John pours himself a glass of juice. The volume in the carton is now 412.5 ml.

What is the height of the juice above the base now?

Answer _____ cm [2]

---

12 Calculate

(a) the cube root of 64

Answer _____ [1]

(b) $3.3^2 + 6^3$

Answer _____ [1]

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(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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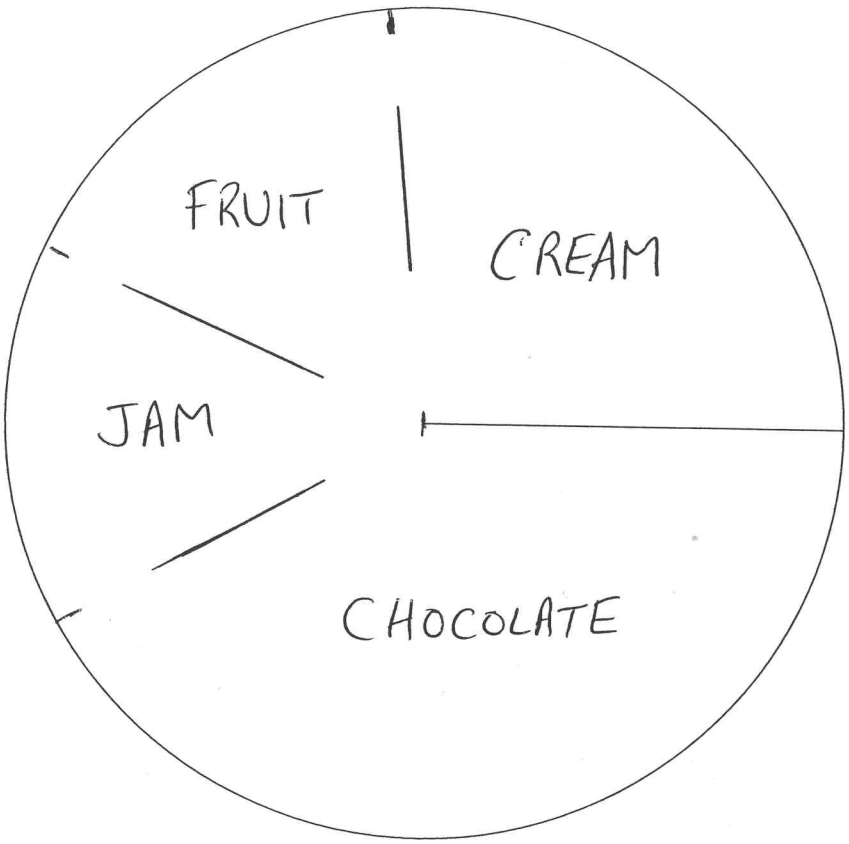
				AVAILABLE MARKS
1	**(a)**	$\frac{6}{9}$	MA1	
		$\frac{2}{3}$	A1	
	(b)	40	A1	
	(c)	5600	A1	
	(d)	$\frac{3}{12}$, $\frac{15}{25}$	A2	6
2	**(a)**	**(i)** 16	A1	
		(ii) 8	A1	
	(b)	11 cm^3	A1 A1 (units)	4
3	**(a)**	at least 8 numbers correctly ordered 4, 5, 5, 6, 6, 6, 7, 7, 7, 8, 8, 8, 8, 9, 9	MA1	
		7	A1	
	(b)	8	A1	3
4	**(a)**	41022	A1	
	(b)	1.5	A1	
	(c)	0.47	A1	
	(d)	72.07	A1	
	(e)	23.4	A1	5
5	**(a)**	Diagram correct	A1	
	(b)	16 and 25	A1	
		16 and 20	A1	
	(c)	64 squares – diagram 8	MA1	
		diagram 8 – 32 triangles	MA1	5

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			AVAILABLE MARKS
6	180 ÷ 10 18	M1 A1 A1	3
7	**(a)** 2000 ÷ 35 or 57.14 57	MA1 A1	
	(b) 5p or £0.05	MA1	3
8	**(a)** AC drawn 6 cm Angle BAC = 50 ± 2º	MA1 MA1	
	(b) Angle ACB measured correctly from diagram (± 2º)	MA1	3
9	see overlay 96º, 60º, 54º, 150º (award one mark for evidence of 6) all sectors correct and labelled	 A2 A2	 4
10	$6x + 2$	A1 A1	2
11	**(a)** $6 \times 11 \times 10.5 = 693$	M1 A1	
	(b) $6 \times 11 \times h = 412.5$ $h = \frac{412.5}{66}$ $h = 6.25$	 MA1 A1	 4
12	**(a)** 4	A1	
	(b) 226.89	A1	2
		Total	**44**

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GCSE MATHEMATICS SUMMER 2011
MODULE N1-2
OVERLAY QUESTION 9



Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

TUESDAY 11 JANUARY
10.30 am – 11.15 am

GMN12

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.

INFORMATION FOR CANDIDATES

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

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 Below is part of a customer's gas bill. Complete it to find the number of units of gas used and the total cost.

Present reading	66908 units
Previous reading	65112 units
Number of units used	_____
Price per unit	16.5p
Total cost for units	£ _____

[4]

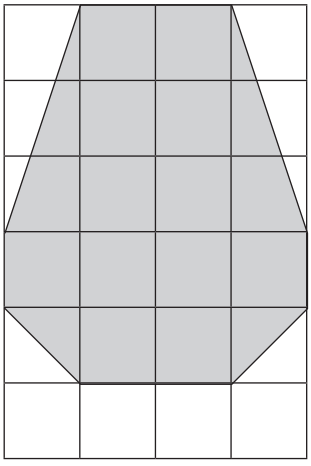
2 **(a)** What metric unit is used for measuring

(i) the capacity of a bottle of perfume, Answer _____ [1]

(ii) the weight of a calculator? Answer _____ [1]

(b) The shaded shape is drawn on a 1 cm grid.

Work out the area of the shaded shape.



Answer _____ cm^2 [2]

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3 Forty pupils were asked to write down an odd number less than 10

Here are the results

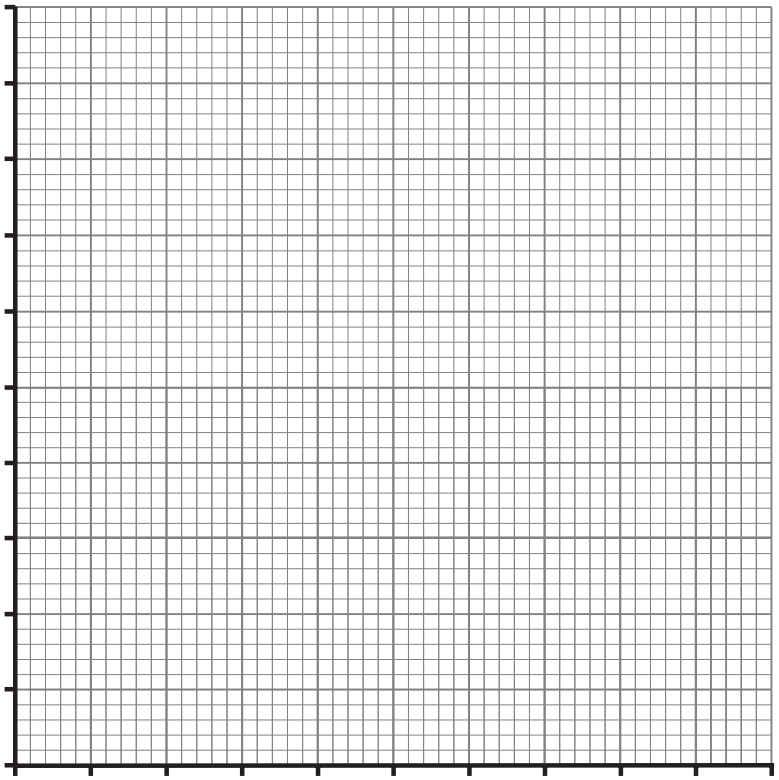
1	5	9	3	1	7	9	5	5	5
3	3	9	7	7	7	5	1	3	7
9	5	1	1	3	7	9	5	3	9
3	3	7	7	1	1	9	3	5	7

(a) Complete the following frequency table.

Odd Number	Tally (if required)	Frequency
1 3 5 7 9		

[2]

(b) Draw a clearly labelled bar chart to show this information on the grid below.



[3]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

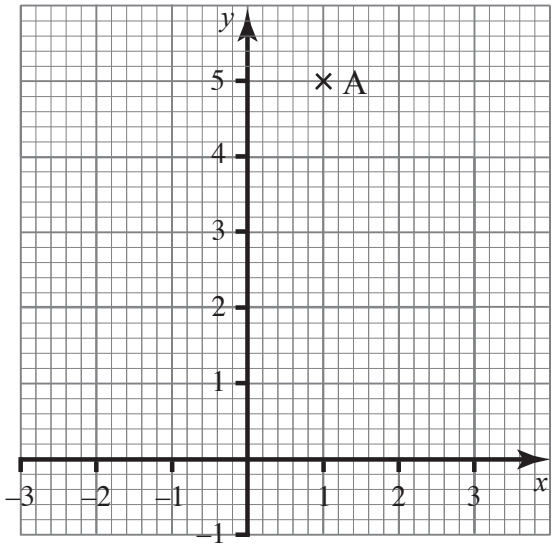
4 **(a)** Write down in figures the number four thousand and nineteen.

Answer _____ [1]

(b) Write down all the multiples of 7 which are less than 25

Answer _____ [2]

5



(a) Write down the coordinates of the point labelled A in the diagram.

Answer (_____ , _____) [1]

(b) Plot and label the point B at (–2, 0). [1]

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Examiner Only	
Marks	Remark

6 **(a)** The display on a fridge/freezer shows the temperature in each compartment as follows

FRIDGE: 5°C	−18°C: FREEZER

(i) How much colder is the freezer than the fridge?

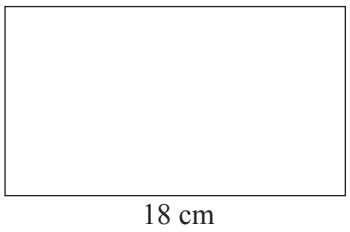
Answer _____ °C [1]

(ii) The door of the freezer was not closed properly and as a result the temperature in the freezer rose by 5 °C.

What temperature should now be showing on the display for the freezer?

Answer _____ °C [1]

(b)



Linda has 80 one-centimetre square tiles. She places all of them on an 18 cm by 12 cm tray to form a rectangle.

This can be done in two different ways to produce two different-sized rectangles.

For each one state the length and breadth of the rectangle.

length = _____cm, breadth = _____cm [1]

length = _____cm, breadth = _____cm [1]

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Examiner Only	
Marks	Remark

7 Complete each of the following:

(a) A man was facing North.

He turned 135° anticlockwise.

He then faced _____ [1]

(b) A man now faces West.

He originally faced North West.

He turned _____° clockwise. [1]

---

8 The ages of 10 people leaving a chemist shop were recorded

23 57 61 28 33 48 19 48 35 12

(a) Calculate the mean age.

Answer _____ [3]

(b) Find the median age.

Answer _____ [2]

Examiner Only	
Marks	Remark

9 **(a)** A teacher has 16 boxes of sweets.

Each box contains 25 sweets.

The teacher shares as many sweets as possible equally among 23 pupils.

(i) How many sweets does each pupil receive?

Answer _____ sweets [1]

(ii) How many sweets are left over?

Answer _____ sweets [1]

(b)

VANZ-TO-GO

Van hire charges

£52 per day

plus

19p per mile

Bob hires a van for two days.

When he returns it the total hire charge is £137.06

How many miles did he drive it for?

Answer _____ miles [3]

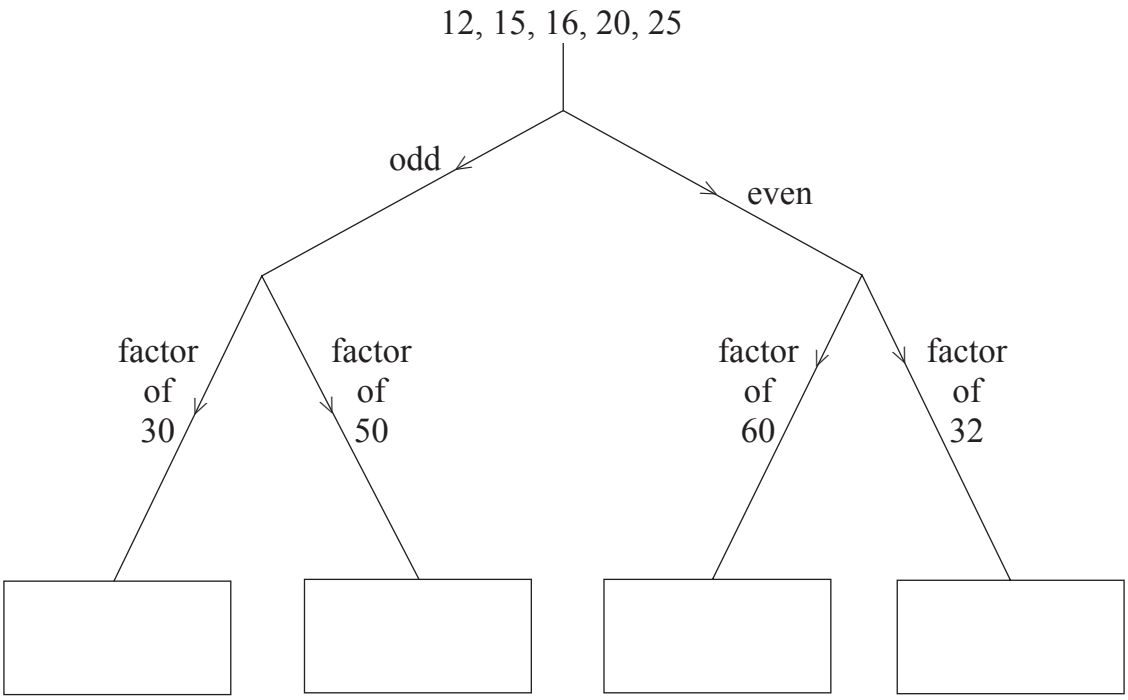
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10 Simplify $10 - 3a + 2 - 5a$

Answer _____ [2]

Examiner Only	
Marks	Remark

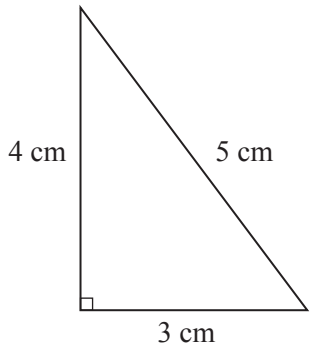
11 Using the decision tree, sort these numbers into the correct boxes.



[2]

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12 **(a)** A right-angled triangle has sides of 3 cm, 4 cm and 5 cm.



On the grid below show how two of these triangles can be put together to make a parallelogram.

[2]

(b) Calculate angle t in the triangle below.

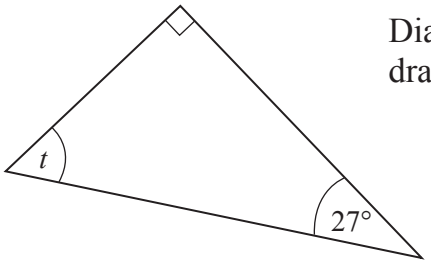


Diagram not drawn accurately.

Answer _____ ° [2]

Examiner Only

Marks	Remark

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13 The stem and leaf diagram shows a list of temperatures.

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

Key 4 | 1 = 41 °C

Write down

(a) the range,

Answer _____ °C [1]

(b) the median.

Answer _____ °C [1]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only	
Marks	Remark

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Rewarding Learning

General Certificate of Secondary Education
January 2011

Mathematics

Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

TUESDAY 11 JANUARY
10.30 am – 11.15 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 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, readings from tables, graphs or answers.

MA indicates marks for combined method and accurate working.

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).

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			AVAILABLE MARKS
1	1796	A1	
	$1796 \times 16.5 = 29634$	M1, A1	
	£296.34	A1	4
2	**(a)** **(i)** ml or cl	A1	
	(ii) g	A1	
	(b) 16	M1, A1	4
3	**(a)** 1 $\left(\begin{array}{cc} \cancel{\text{IIII}} & \text{II} \\ \cancel{\text{IIII}} & \text{IIII} \\ \cancel{\text{IIII}} & \text{III} \\ \cancel{\text{IIII}} & \text{IIII} \\ \cancel{\text{IIII}} & \text{II} \end{array}\right)$ 7		
	3 9		
	5 8		
	7 9	A2	
	9 7	(allow A1 for 3 correct)	
	(b) Correctly labelled horizontal and vertical scales	A1	
	Bars	A2	
		(3 correct A1)	5
4	**(a)** 4019	A1	
	(b) 7, 14, 21	A2 (A1 for 2 correct)	3
5	**(a)** (1,5)	A1	
	(b) B correctly plotted at (–2,0)	A1	2
6	**(a)** **(i)** 23	A1	
	(ii) –13	A1	
	(b) 10, 8	A1	
	16, 5	A1	4
7	**(a)** South West (SW)	A1	
	(b) 315	A1	2

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			AVAILABLE MARKS
8	**(a)** Total = 364 Mean = 364/10 = 36.4	M1, A1 MA1	
	(b) Ordering at least 5 numbers 34	MA1 MA1	5
9	**(a)** **(i)** 17	A1	
	(ii) 9	A1	
	(b) 137.06 – 104 = 33.06 3306 ÷ 19 = 174	MA1 M1, A1	5
10	12 – 8*a*	A1, A1	2
11	15 | 25 | 12, 20 | 16	A2 allow A1 for 3 correct	2
12	**(a)** parallelogram formed	M1, A1	
	(b) 180 – (90 + 27) = 63	M1, A1	4
13	**(a)** Range = 41 – 22 = 19	A1	
	(b) Median is 7th i.e. 32	A1	2
		Total	44

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
2010

Mathematics



Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

GMN12

TUESDAY 1 JUNE

10.30 a.m. – 11.15 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 twelve** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

INFORMATION FOR CANDIDATES

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

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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Examiner Only	
Marks	Remark

1 **(a)** Write the number six million, one hundred and forty-six in figures.

Answer _____ [1]

(b) Write the number 20 401 in words.

Answer _____

_____ [1]

(c) Which of these is the odd one out?

Explain your answer.

$\frac{6}{10}$ 0.3 60% $\frac{15}{25}$

Answer _____

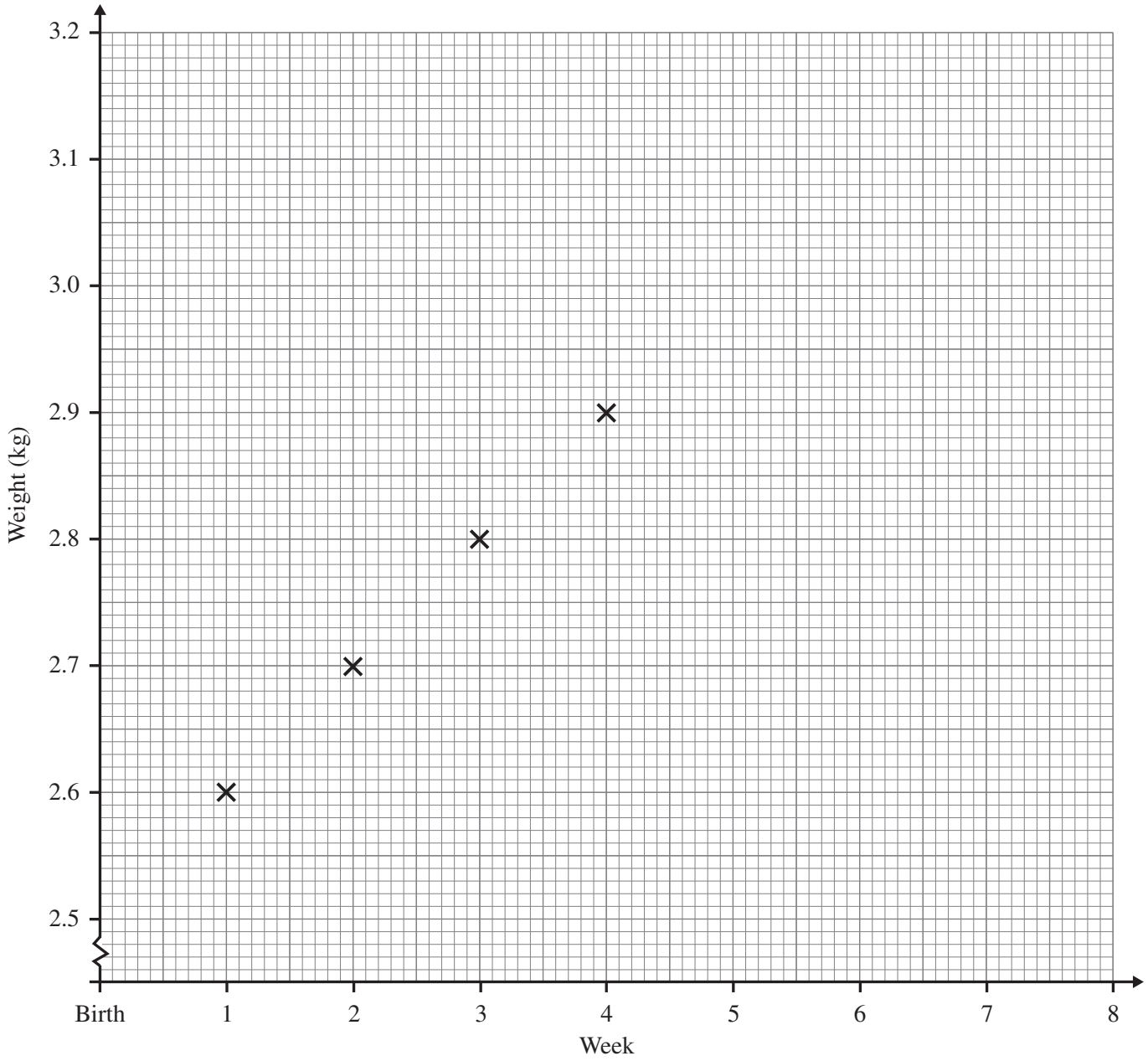
because _____ [2]

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2 Baby Jill was weighed at birth and at the end of each week, for the first eight weeks after her birth.
At birth she weighed 2.6 kg.

(a) Draw a line graph to show these results.
(The first 4 points have been plotted for you.)

Week	1	2	3	4	5	6	7	8
Weight (kg)	2.6	2.7	2.8	2.9	2.7	2.8	3.0	3.2



[2]

Examiner Only	
Marks	Remark

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(b) Estimate Jill's weight after $1\frac{1}{2}$ weeks.

Answer _____ kg [1]

(c) During one of these weeks, Jill was ill. Which week do you think it was?
Explain your answer.

Answer Week _____ because _____ [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

3 Which **metric** unit is the most suitable to measure

(a) the width of a room,

Answer _____ [1]

(b) the weight of an egg,

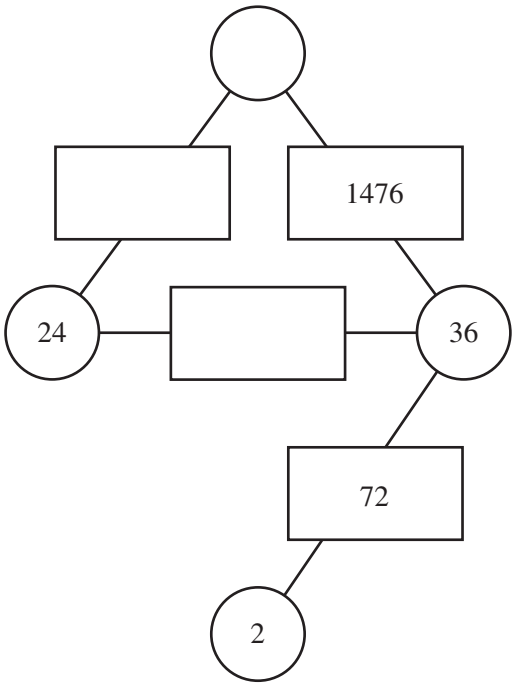
Answer _____ [1]

(c) the capacity of a large bottle?

Answer _____ [1]

---

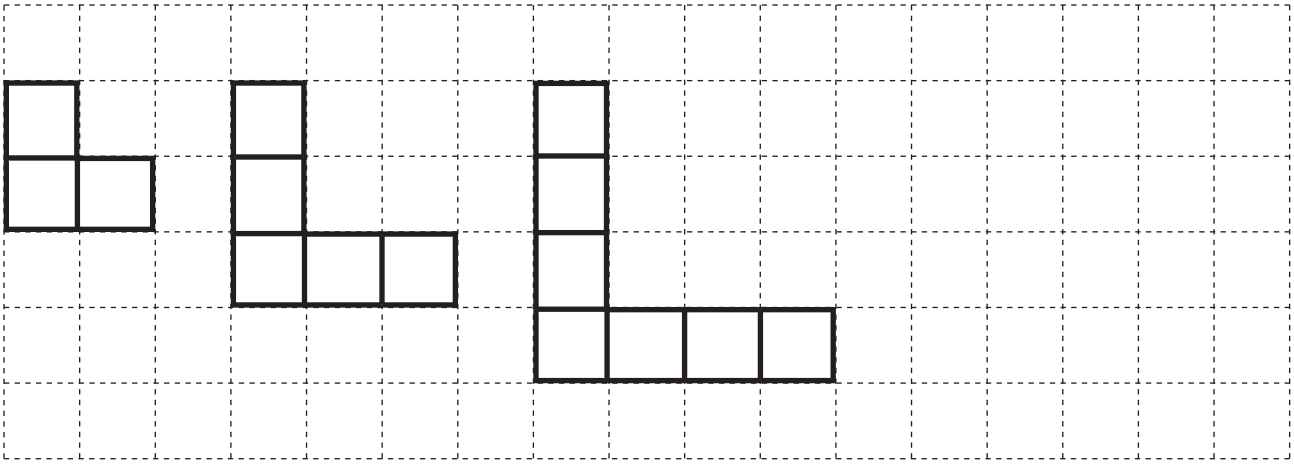
4 Each number in a rectangle is the product of the numbers in the circles on either side.
Complete the diagram.



[3]

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5 The sequence of shapes below is made with matches.



Shape1 Shape 2 Shape 3 Shape 4

Examiner Only	
Marks	Remark

(a) Draw Shape 4 on the grid. [1]

(b) Complete the table for Shapes 4 and 5 [1]

Shape number	1	2	3	4	5
Number of matches	10	16	22		

(c) What pattern do you notice in the "Number of matches" row?

Answer _____ [1]

(d) Find the number of matches in Shape 12

Answer _____ [2]

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6 6000 nails are packed into boxes.
Each box contains 64 nails when full.
As many boxes as possible are completely filled.

(a) How many **full** boxes are there?

Answer _____ [1]

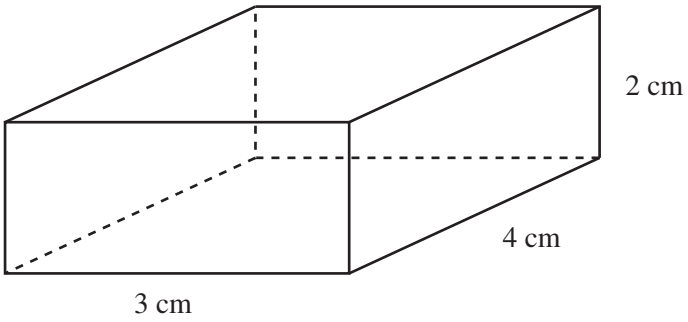
(b) How many nails are left over?

Answer _____ [1]

Examiner Only	
Marks	Remark

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7 The diagram shows a cuboid.



Draw an accurate net of this cuboid using the 1 cm grid below.

[3]

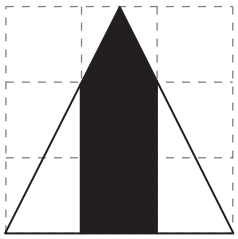
Examiner Only

Marks	Remark

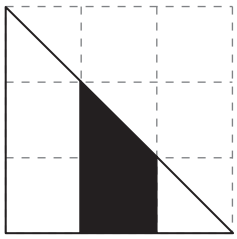
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Examiner Only	
Marks	Remark

8 Two triangles are drawn below.



Mary's triangle



Joan's triangle

Mary claims she has shaded one-third of her triangle.
Joan claims she has shaded one-third of her triangle.

Is either of the girls correct?
Explain your answer.

_____

_____ [3]

---

9 **(a)** A hurling coach measures to the nearest second the time it takes his ten fastest players to run 100 m. The times are

13, 10, 12, 14, 12, 11, 12, 10, 14, 11

(i) Calculate the range for these times.

Answer _____ seconds [1]

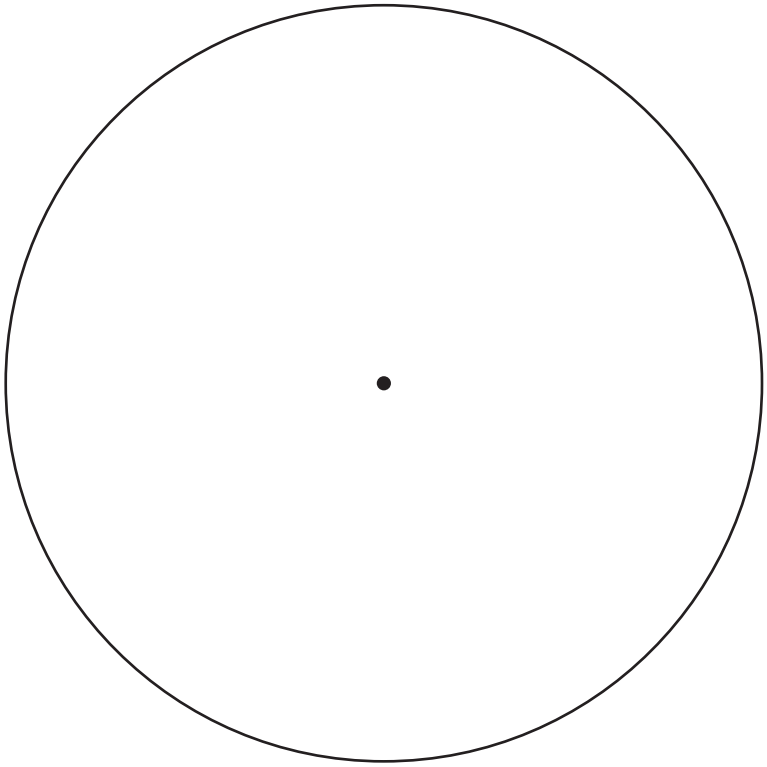
(ii) Calculate the mean time.

Answer _____ seconds [3]

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(b) The coach divides his 40 players into four groups.
Complete the table and draw a pie chart to show this information.

Group	Number of players	Angle
Stick work	12	
Tackling	10	
Catching	6	
Shooting	12	



[4]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

10 Find the volume of water in a full tank which measures 35 cm by 42 cm by 60 cm.

Answer _____ [3]

11



Cost: £119.90

An iPod costs £119.90
Dylan has already saved £35 towards the cost of the iPod.
He continues to save £7.50 per week.
How many complete weeks will it be before he can buy the iPod?

Answer _____ weeks [4]

---

12 Simplify $4x - 2y - 2x - 3y$

Answer _____ [2]

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THIS IS THE END OF THE QUESTION PAPER

GCSE

Mathematics (Modular)

Summer 2010

Mark Schemes

Issued: October 2010

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Rewarding Learning

General Certificate of Secondary Education
2010

Mathematics

Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

TUESDAY 1 JUNE

10.30 am – 11.15 am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2010

Introduction

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Some common examples of this occur in the following cases:

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(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).

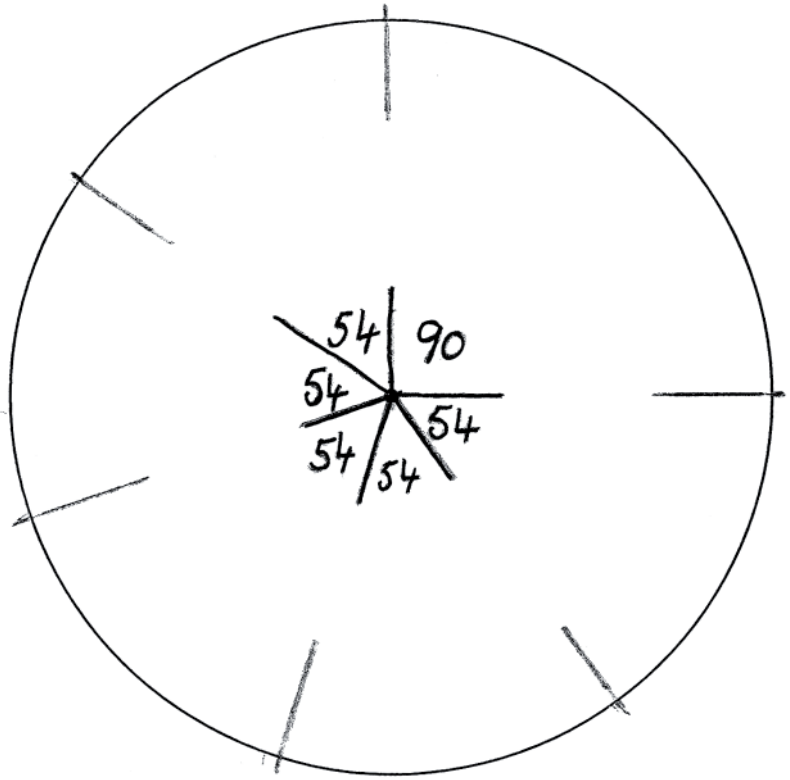
				AVAILABLE MARKS
1	**(a)**	6000146	A1	
	(b)	twenty thousand four hundred and one	A1	
	(c)	0.3	A1	
		The others are all equivalent to $\frac{3}{5}$ (or 0.6 or 60%)	A1	4
2	**(a)**	Line graph drawn (4 points – MA1; Line connecting points MA1)		
	(b)	2.65	MA1	
	(c)	Week 5 because there was a decrease in weight	A1	4
3	**(a)**	metres	A1	
	(b)	grammes	A1	
	(c)	litres	A1	3
4		41	A1	
		984	A1	
		864	A1	3
5	**(a)**	correct shape	A1	
	(b)	28, 34	A1	
	(c)	add 6	A1	
	(d)	76	M1, A1	5
6	**(a)**	93	MA1	
	(b)	48	A1	2
7		6 rectangles	A1	
		3 pairs	A1	
		Correct measurements	A1	3

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			AVAILABLE MARKS
8	Joan is correct • In Mary's triangle the shaded part is much greater than the other two equal unshaded parts; therefore it cannot be one third of the complete triangle • In Joan's triangle the unshaded parts can be split to make two parts equal to the shaded part; therefore the shaded part is one third of the complete triangle. • **or** equivalent correct explanation.	A1 A2	3
9	**(a)** **(i)** Range = 4 seconds	A1	
	(ii) $\frac{119}{10} = 11.9$ seconds	MA1, MA1, A1	
	(b) $\frac{360°}{40} = 9°$	A1	
	Angles 108° 90° 54° 108°	A1	
	Correct pie chart drawn – see overlay	A2	8
10	Volume = $35 \times 42 \times 60$	MA1	
	= $88\,200\ cm^3$	A1 A1 units	3
11	£119.90 – £35 = £84.90	MA1	
	£84.90 ÷ £7.50	M1	
	= 11.32	A1	
	12 weeks	A1	4
12	$2x - 5y$	A1, A1	2
		Total	**44**

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GCSE MATHEMATICS SUMMER 2010
MODULE N1-2
OVERLAY QUESTION 9



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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2010

Mathematics



Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

GMN12

TUESDAY 12 JANUARY

10.30 am – 11.15 am

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

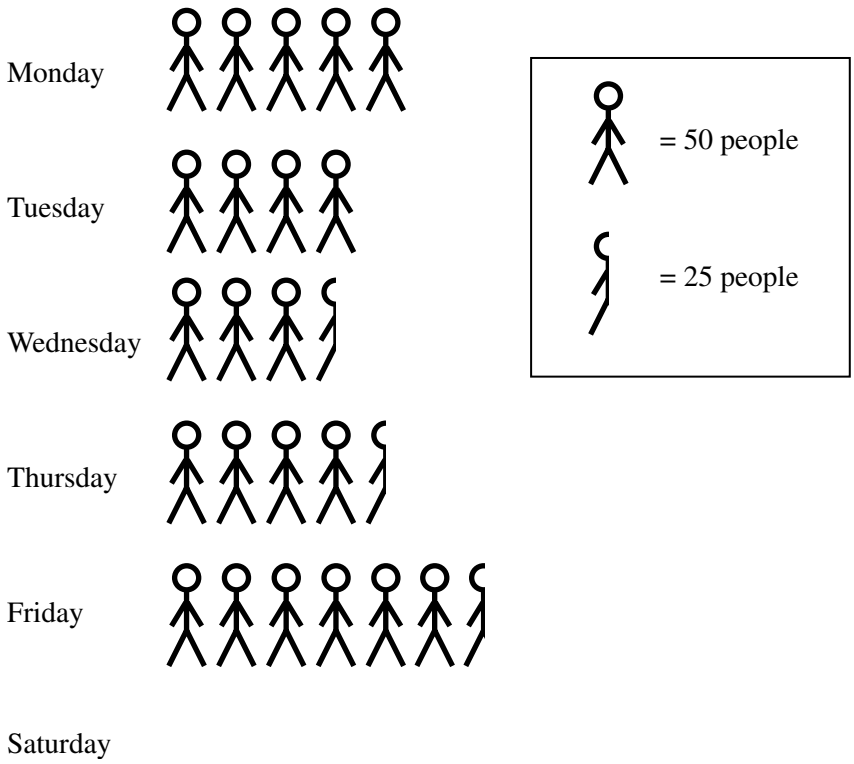
The total mark for this paper is 44.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a calculator, ruler, compasses, set-square and protractor.

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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Examiner Only	
Marks	Remark

1 The pictogram illustrates the number of people attending the cinema in a week.



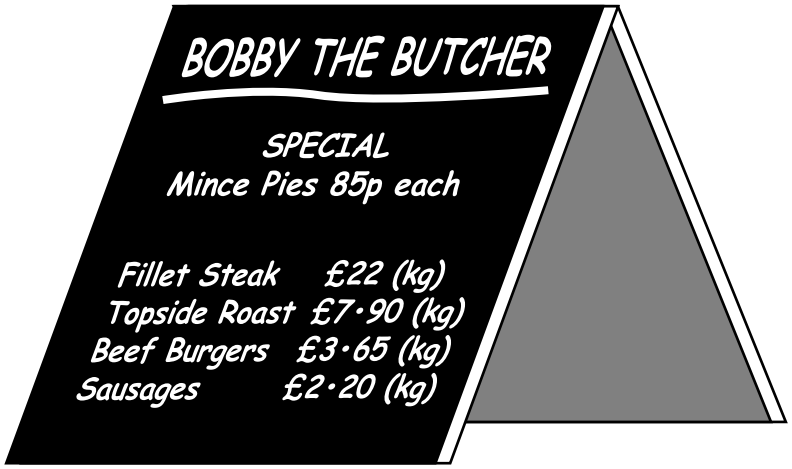
(a) How many people attended the cinema on Wednesday?

Answer _____ [1]

(b) 225 people attended the cinema on Saturday. Complete the pictogram for Saturday. [2]

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2



Complete the bill.

$\frac{1}{4}$ kg Fillet Steak _____

2 kg Sausages _____

4 Mince Pies _____

Total £ _____ [4]

3

11	7	14	36
45	9	3	22

Multiply the second highest number in the table by the second lowest number and divide the answer by 4

Answer _____ [3]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

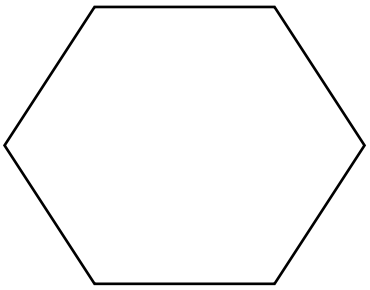
4 **(a)** Name the shapes drawn.

(i)



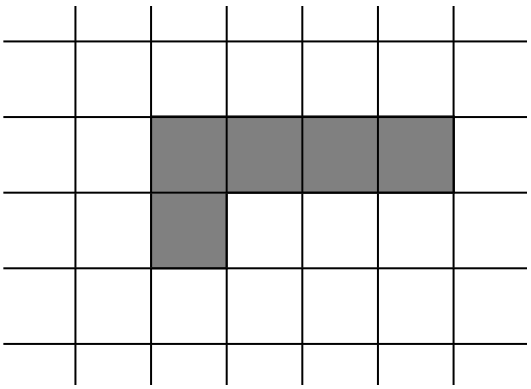
Answer _____ [1]

(ii)



Answer _____ [1]

(b) Work out the perimeter of the following shape drawn on a 1 cm grid.



Answer _____ cm [1]

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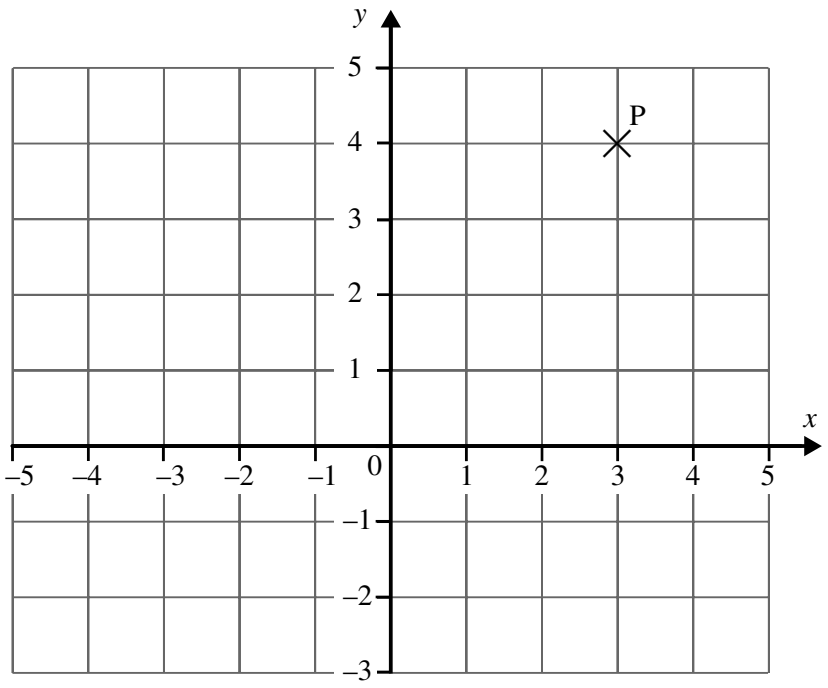
(c) Draw a sketch of a square-based pyramid.

[1]

Examiner Only	
Marks	Remark

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5 The grid below represents part of the map of a town.



(a) The point P represents the location of the Post Office.

Write down the co-ordinates of the point P.

Answer P (_____ , _____) [1]

(b) The hospital, H is at (2, 0) and the school, S is at (4, –1).

Mark and label clearly the points H and S on the grid above. [2]

(c) The line $y = 4$ represents the main street in the town.

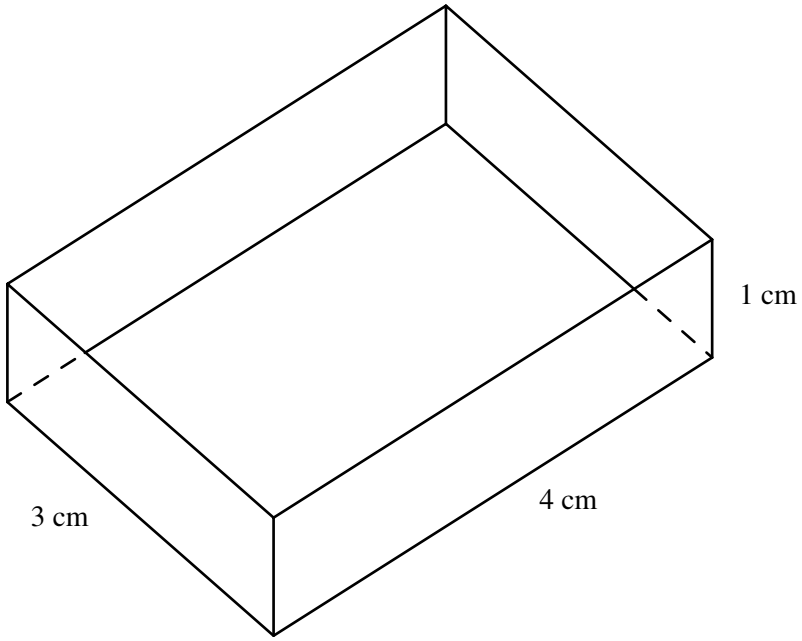
Draw the line $y = 4$ on the grid above. [1]

Examiner Only

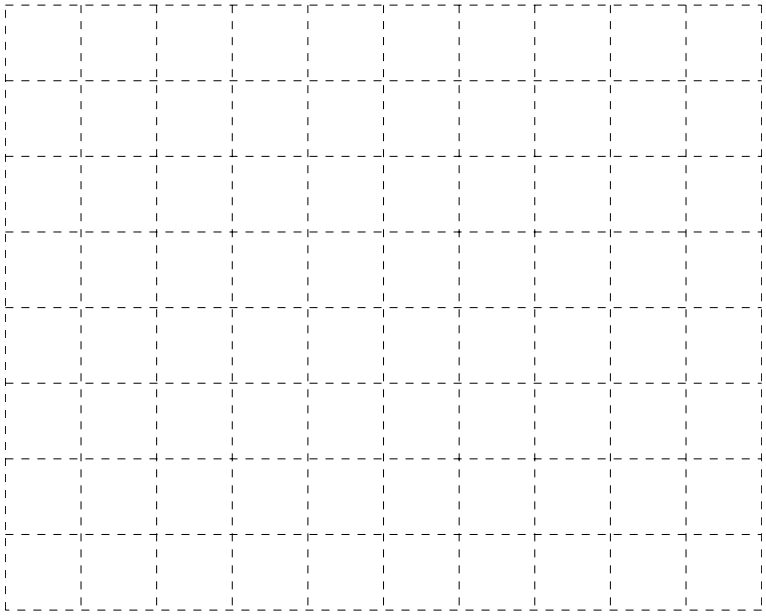
Marks	Remark

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6



Draw the net of the open box on the 1 cm grid below. [3]



Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

7 **(a)**



Source: www.londoninternationalfilms.com/images/SiteImages/CinemaInside.jpg

There are 480 seats in a cinema. 65% of them are in the stalls section. How many is this?

Answer _____ [2]

(b) Sue has been saving to take some friends to the cinema. If she has £32.40 saved and the tickets cost £5.80 each, how many **friends** can she take?

Answer _____ [3]

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Examiner Only	
Marks	Remark

8 The figures give the shoe sizes of 20 pairs of shoes sold in a shop one Saturday afternoon.

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

(a) Calculate the mean of the shoe sizes.

Answer _____ [3]

(b) Write down the median shoe size.

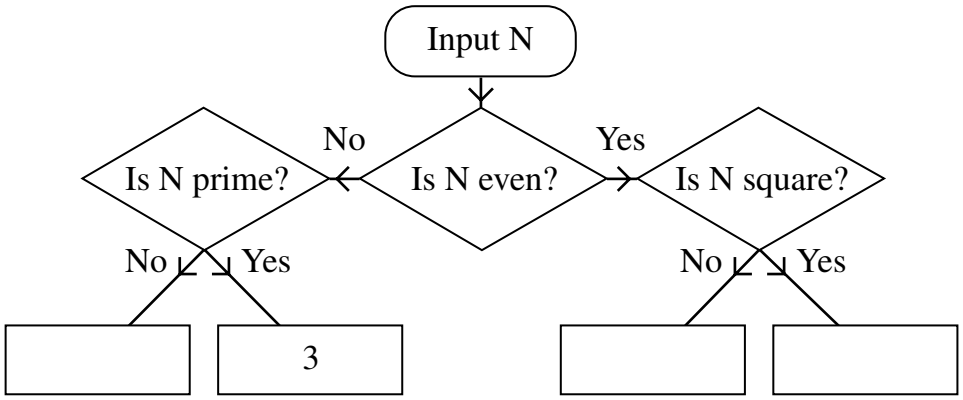
Answer _____ [2]

(c) The shop wishes to place an order for more shoes. Based on Saturday's sales, which average – mean, mode, or median – do you think they should give greatest consideration to when placing the order? Give a reason for your answer.

Answer _____ because _____

_____ [2]

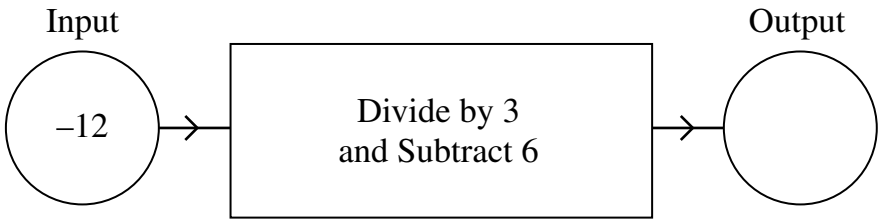
9



Use the decision tree diagram to sort the integers from 1 to 10
The integer N = 3 has already been done. [2]

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10 Complete the output for the function machine below.



[1]

11 **Broadband for speed and savings**

Download speed	15 Mb
Wireless router	One off payment £20
Monthly price	£16 per month for first 6 months £22 per month thereafter

Darragh wants Internet Broadband, together with a wireless router, and signs up for the 15 Mb package.

After a period of time he decides to upgrade to a new package. At this stage he has paid £270 altogether. After how many months did he decide to upgrade?

Answer _____ [4]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

12 (a)

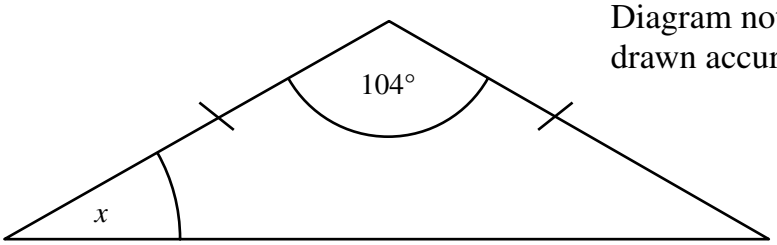


Diagram not drawn accurately

Calculate the angle x in the isosceles triangle.

Answer _____° [2]

(b) Calculate the area of a rectangle measuring 6.8 cm by 2.6 cm.

Answer _____ cm^2 [2]

THIS IS THE END OF THE QUESTION PAPER

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1312-044-1

GCSE

Mathematics (Modular)

January 2010

Mark Schemes

Issued: April 2010

Rewarding Learning

General Certificate of Secondary Education

January 2010

Mathematics

Module N1 Paper 2

(With calculator)

Foundation Tier

[GMN12]

TUESDAY 12 JANUARY

10.30 am – 11.15 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.

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MA indicates marks for combined method and accurate working.

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.

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				AVAILABLE MARKS
1	**(a)**	175	A1	
	(b)	4 whole symbols and 1 half symbol drawn	MA1 A1	3
2		£5.50 + £4.40 + £3.40	MA1 each	
		= £13.30	MA1	4
3		(36 × 7) ÷ 4	MA2	
		= 63	A1	3
4	**(a)**	**(i)** Parallelogram	A1	
		(ii) Hexagon	A1	
	(b)	12	A1	
	(c)	Correct sketch	A1	4
5	**(a)**	(3, 4)	A1	
	(b)	H at (2, 0) and S at (4, –1)	A1, A1	
	(c)	Line $y = 4$ drawn	A1	4
6		one 4 × 3 rectangle two 4 × 1 rectangles in correct position two 3 × 1 rectangles in correct position	A1 A1 A1	3
7	**(a)**	65% of 480		
		$= \frac{480}{100} \times 65 = 312$	M1, A1	
	(b)	£32.40 ÷ 5.80	M1	
		= 5.586 . . . = 5 Tickets	A1	
		Which means 4 friends	A1	5

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			AVAILABLE MARKS
8	**(a)** Total = 112	MA1	
	$\frac{112}{20} = 5.6$	M1, A1	
	(b) Indication of 10.5th value	M1	
	= 5.5	A1	
	(c) Mode because it is the most common shoe size sold	A2	7
9	1 9 | 3 5 7 | 2 6 8 10 | 4		
	All correct (5 correct MA1)	MA2	2
10	–10	MA1	1
11	20 + 6 × 16 = 116	MA1	
	270 – 116 = 154	MA1	
	154 ÷ 22 = 7 months	MA1	
	Answer 13 months	MA1	4
12	**(a)** (180 – 104)/2 = 38	MA1, A1	
	(b) 6.8 × 2.6 = 17.68	M1, A1	4
		Total	**44**

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education

2009

Mathematics



Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

GMN12

MONDAY 18 MAY

2.45 pm – 3.30 pm

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 Blocks are stacked as shown.

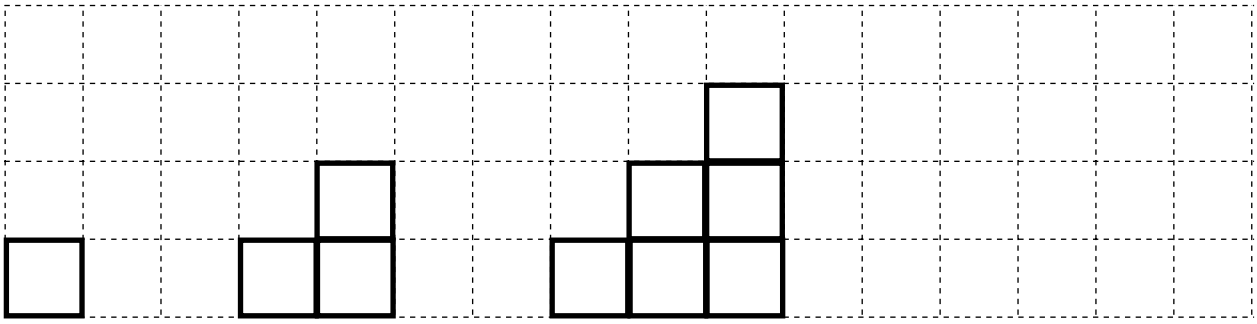


Diagram 1 Diagram 2 Diagram 3 Diagram 4

Examiner Only	
Marks	Remark

(a) Draw diagram 4. [1]

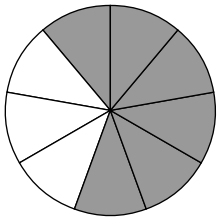
(b) Complete the table for diagrams 4 and 5.

Diagram	1	2	3	4	5
Number of blocks	1	3	6		

[1]

---

2 **(a)**



Write down the fraction shaded, in its simplest form.

Answer _____ [2]

(b) Which fractions in the list

$$\frac{3}{12} \qquad \frac{4}{15} \qquad \frac{5}{20} \qquad \frac{6}{24} \qquad \frac{8}{30}$$

are **not** equivalent to $\frac{1}{4}$?

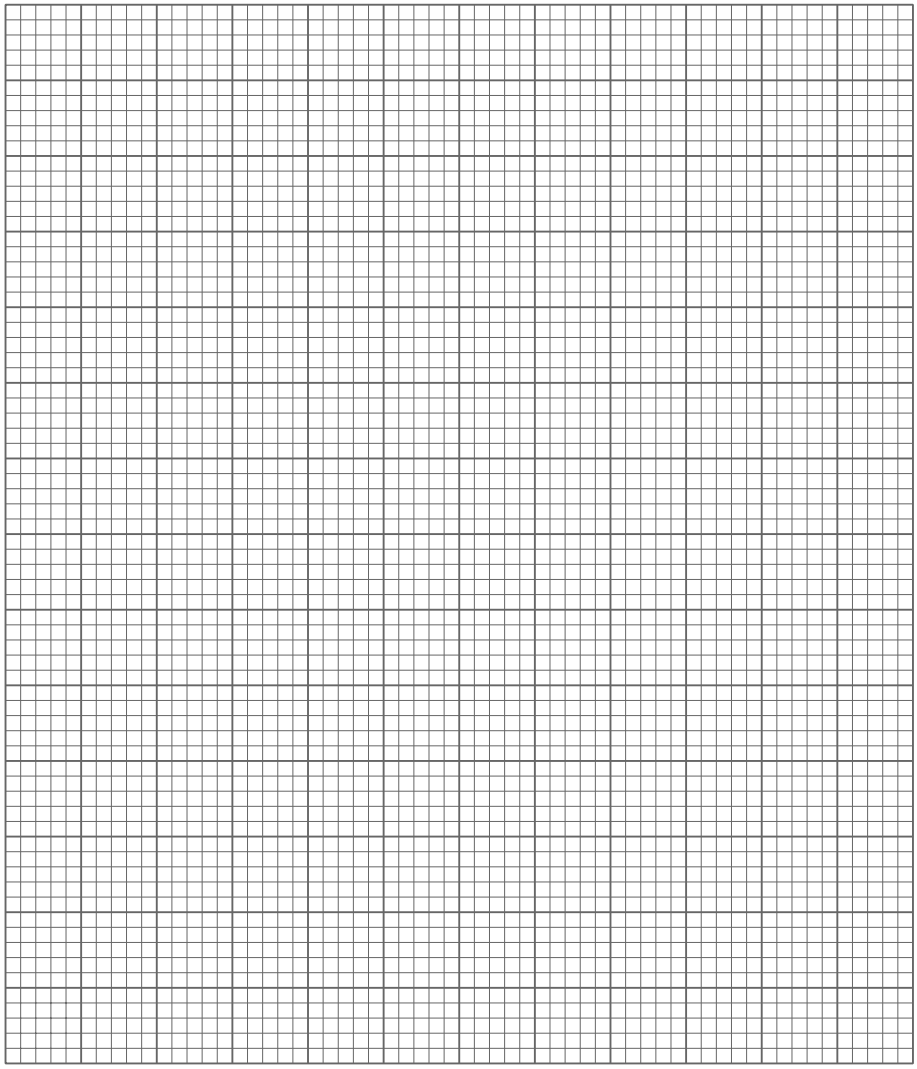
Answer _____ [2]

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3 Janet recorded the types of vehicles passing her house.

Type of vehicle	Tally	Frequency
Lorry	𝍸 I	6
Bus	II	2
Car	𝍸 𝍸 II	12
Motorbike	IIII	4
Van	III	3

(a) On the graph paper, draw a bar chart to show this information. [3]



Examiner Only

Marks	Remark

(b) Which is the most popular type of vehicle?

Answer _____ [1]

(c) How many vehicles did Janet record altogether?

Answer _____ [1]

Examiner Only

Marks	Remark

---

4 Which **metric** unit would be used for

(a) weighing a bag of potatoes?

Answer _____ [1]

(b) measuring the amount of liquid in a can of soft drink?

Answer _____ [1]

(c) measuring the distance between two large cities in Europe?

Answer _____ [1]

---

5 **(a)** What change should you get from £5 if you bought 4 packets of biscuits at 63p each?

Answer _____ [2]

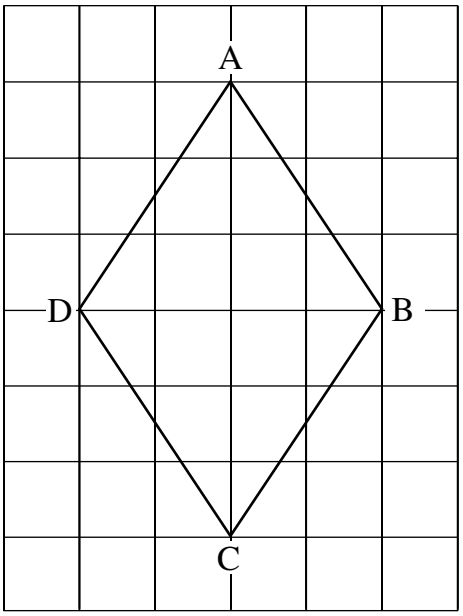
(b) How many boxes of chocolates costing £4.20 could you buy for £30?

Answer _____ [2]

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Examiner Only	
Marks	Remark

6 **(a)** A four-sided shape ABCD is drawn on the 1 cm grid.



Find the area of ABCD.

Answer _____ cm^2 [1]

(b) ABC is a straight line.

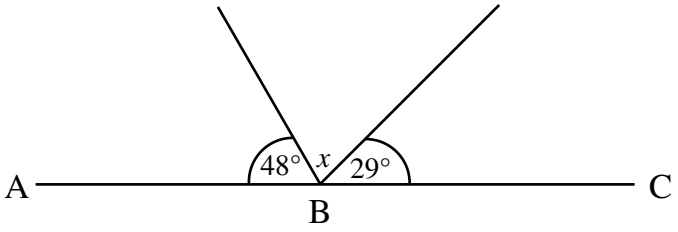


Diagram not drawn accurately

Calculate the size of angle x.

Answer _____ ° [1]

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7 **(a)** Calculate

(i) $\sqrt{31.36}$

Answer _____ [1]

(ii) 7.3^2

Answer _____ [1]

(b) Lee's salary is £16 000 and he is due to get an increase of 5%.
How much will this increase be?

Answer £ _____ [2]

(c) **(i)** Write 25.289 correct to 2 decimal places.

Answer _____ [1]

(ii) Write 8.45 correct to 1 decimal place.

Answer _____ [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

8 **(a)** $p = 2$, $q = \frac{1}{2}$, $r = 4$

Evaluate $p + 2q - r$

Answer _____ [2]

(b) Solve the equation $\frac{y}{3} = 6$

Answer y = _____ [1]

---

9 The temperature was 1 °C. Later it was –7 °C.

(a) How much had the temperature fallen?

Answer _____ °C [1]

The temperature then rose by 3 °C.

(b) What was the final temperature?

Answer _____ °C [1]

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10 The 10 boys in Class 12A gained the following marks in a test.

18, 12, 15, 9, 13, 14, 20, 11, 10, 8

The 8 girls in Class 12A gained a total of 128 marks.

Which group did better, boys or girls? Give a reason for your answer.

Answer _____

because _____

_____ [4]

Examiner Only

Marks	Remark

---

11 Calculate

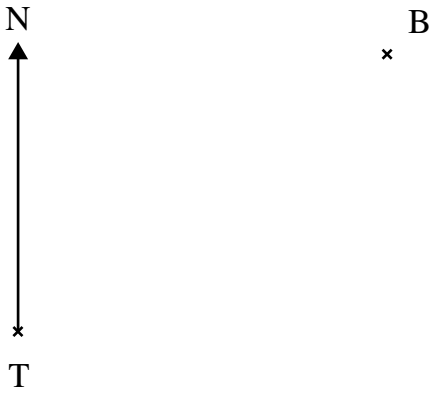
(a) the cube root of 343

Answer _____ [1]

(b) $\dfrac{10}{0.5^2}$

Answer _____ [2]

12



Examiner Only	
Marks	Remark

T is a point at the centre of a town square.
T and a bank, B, are marked on the diagram above.

(a) (i) Find the bearing of B from T.

Answer _____ ° [1]

The scale of the diagram is 1 cm = 20 m.

The cinema, C, is 90 m from T and on a bearing of 160° from T.

(ii) Mark the position of the cinema, C, on the diagram. [2]

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(b)

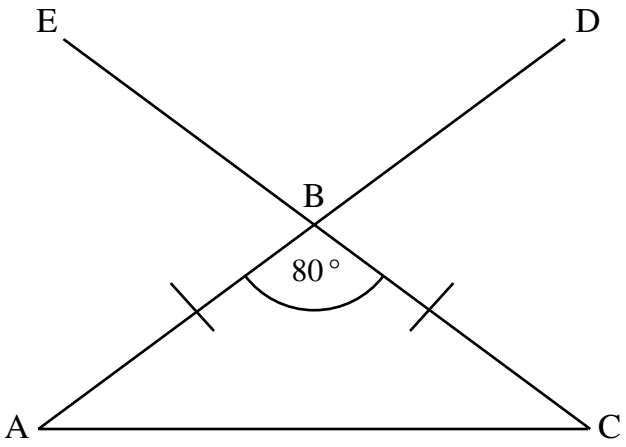


Diagram not drawn accurately

ABC is an isosceles triangle. ABD and CBE are straight lines.
Angle ABC is 80°

Find the size of

(i) angle EBD.

Answer _____ ° [1]

(ii) angle BAC.

Answer _____ ° [2]

Examiner Only	
Marks	Remark

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

2009

Mathematics

Module N1 Paper 2

(With calculator)

Foundation Tier

[GMN12]

MONDAY 18 MAY

2.45 pm – 3.30 pm

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2009

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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)**	Diagram 4 correct	A1	
	(b)	10 and 15	A1 (both correct)	2
2	**(a)**	$\frac{6}{9} = \frac{2}{3}$	A1, A1	
	(b)	$\frac{4}{15}, \frac{8}{30}$	A1, A1	4
3	**(a)**	scales bars (allow A1 for 3 correct)	A1 A2	
	(b)	car	A1	
	(c)	27	A1	5
4	**(a)**	kilogram	A1	
	(b)	millilitre or litre	A1	
	(c)	kilometre	A1	3
5	**(a)**	4 × 63p = £2.52 change = £5 – £2.52 = £2.48	MA1 MA1	
	(b)	30 ÷ 4.2 = 7.14..... = 7	MA1 MA1	4

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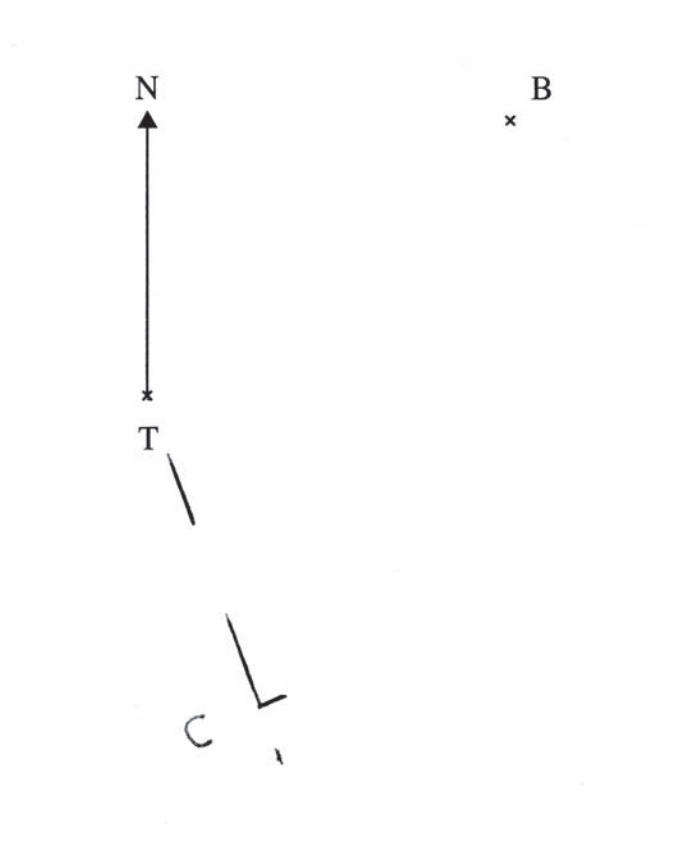
			AVAILABLE MARKS
6	**(a)** $12\ cm^2$	A1	
	(b) $180 - 48 - 29 = 103$	A1	2
7	**(a)** **(i)** 5.6	A1	
	(ii) 53.29	A1	
	(b) $\frac{5}{100} \times 16\,000$	MA1	
	$= £800$	MA1	
	(c) **(i)** 25.29	A1	
	(ii) 8.5	A1	6
8	**(a)** $2 + 1 - 4$	MA1	
	$= -1$	A1	
	(b) $y = 18$	MA1	3
9	**(a)** 8	A1	
	(b) –4	A1	2
10	Girls	A1	
	Boys' mean = 130/10 = 13	M1, A1	
	Girls' mean = 128/8 = 16	MA1	4
11	**(a)** 7	A1	
	(b) $\frac{10}{0.25}$	MA1	
	$= 40$	A1	3

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					AVAILABLE MARKS
12	**(a)**	**(i)**	053° or N53°E (±2°)	A1	
		(ii)	distance 4.5 cm (±2 mm) bearing 160° (±2°)	A1 A1	
	(b)	**(i)**	80	MA1	
		(ii)	180 – 80 = 100 100 ÷ 2 = 50	MA1 MA1	6
				Total	**44**

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GCSE MATHEMATICS SUMMER 2009
MODULE N1-2
OVERLAY QUESTION 12



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2009

Mathematics



Module N1 Paper 2
(With calculator)
Foundation Tier

[GMN12]

GMN12

FRIDAY 9 JANUARY

10.30 am – 11.15 am

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

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

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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Examiner Only	
Marks	Remark

1 The number of medals won by Chile in the Special Olympics is shown in the pictogram below.

MEDALS WON

Gold	◯ ◯	8
Silver	◯ ◯ ◯ ◖	
Bronze		20

(a) Complete the key for the pictogram.

◯ represents _____ medals [1]

(b) How many silver medals were won?

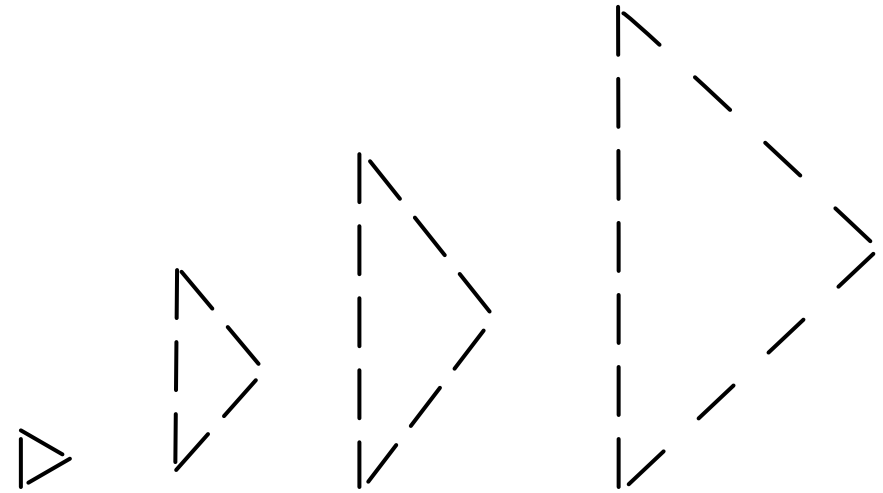
Answer _____ [1]

(c) Complete the pictogram to show the number of bronze medals. [1]

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Examiner Only	
Marks	Remark

2 Triangular shapes are formed using matchsticks.



Shape 1 Shape 2 Shape 3 Shape 4

(a) Complete the table to show the total number of matchsticks needed for Shape 5.

Shape number	1	2	3	4	5
Number of matchsticks	3	7	11	15	

[1]

(b) What pattern do you notice in the 'Number of matchsticks' row?

_____

_____ [1]

3 What metric unit would you use to measure

(a) the amount of liquid on a teaspoon,

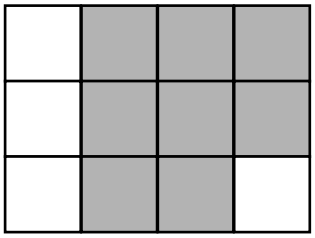
Answer _____ [1]

(b) the weight of a packed suitcase?

Answer _____ [1]

Examiner Only	
Marks	Remark

4 **(a)**



The rectangle is divided into 12 equal parts.

Write down, **in its simplest form**, the fraction of the rectangle which is **shaded**.

Answer _____ [2]

(b) Write $\frac{1}{4}$ as a percentage.

Answer _____% [1]

(c) Write 0.75 as a fraction in its simplest form.

Answer _____ [1]

(d) $\frac{2}{3}$ $\frac{6}{9}$ $\frac{10}{15}$ $\frac{4}{12}$ $\frac{4}{6}$ $\frac{2}{5}$

Explain why $\frac{4}{12}$ and $\frac{2}{5}$ are different from the other fractions.

[2]

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Examiner Only	
Marks	Remark

5 Ten students have part time jobs at the weekend. Their earnings are

£20 £33 £19 £22 £31

£36 £28 £25 £27 £34

Calculate the mean amount of money earned by the students.

Answer £_____ [3]

---

6 **(a)** Write down the number thirty-seven thousand and fifty-six in figures.

Answer _____ [1]

(b) Calculate $(3.27)^2$

Answer _____ [1]

(c) Write down the largest of these three numbers.

0.5788 0.572 0.58

Answer _____ [1]

(d) Write 51.07718 correct to two decimal places.

Answer _____ [1]

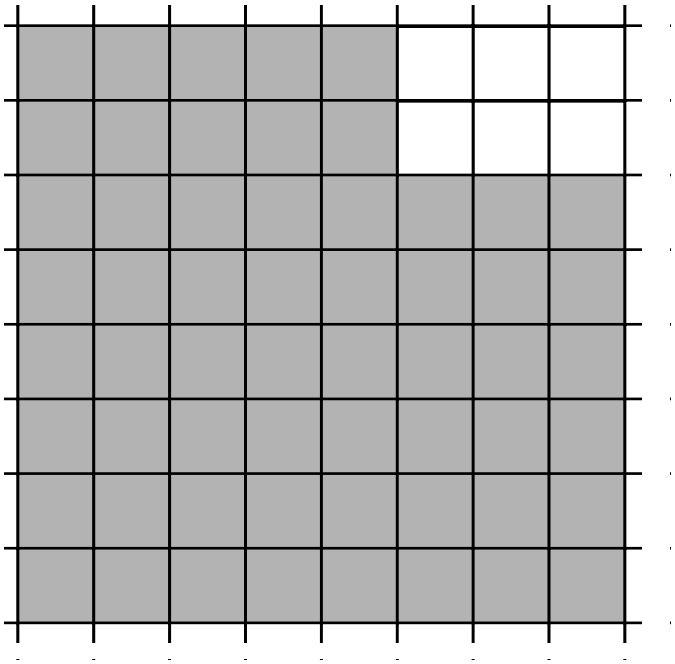
(e) Write 34.56 correct to three significant figures.

Answer _____ [1]

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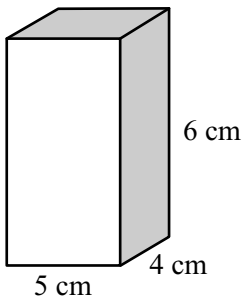
Examiner Only	
Marks	Remark

7 **(a)** Find the area of the shaded shape. Each small square has side 1 cm.



Answer _____ [3]

(b) Calculate the volume of the cuboid shown.



Answer _____ cm^3 [2]

(c) A different cuboid has volume 300 cm^3. Its breadth is 5 cm. Write down possible dimensions for its length and height.

Answer _____ cm and _____ cm [1]

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Examiner Only	
Marks	Remark

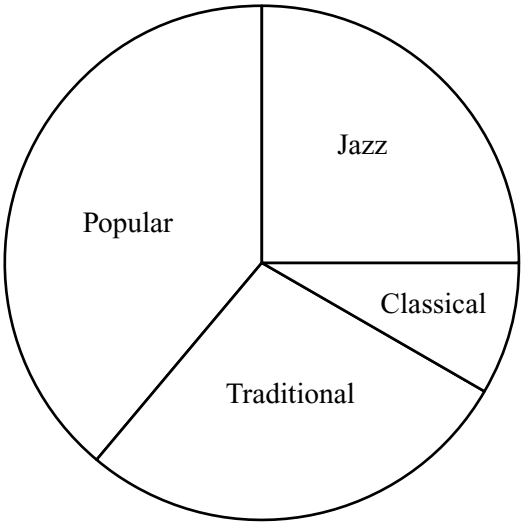
8 Ann has £10 to buy notebooks at 85p each.

What change should she get if she buys as many as possible?

Answer _____ [3]

---

9 **(a)**



The pie chart shows the preferred choice of music of 48 people questioned in a street survey.

(i) How many people preferred jazz?

Answer _____ [1]

(ii) How many people preferred classical music?

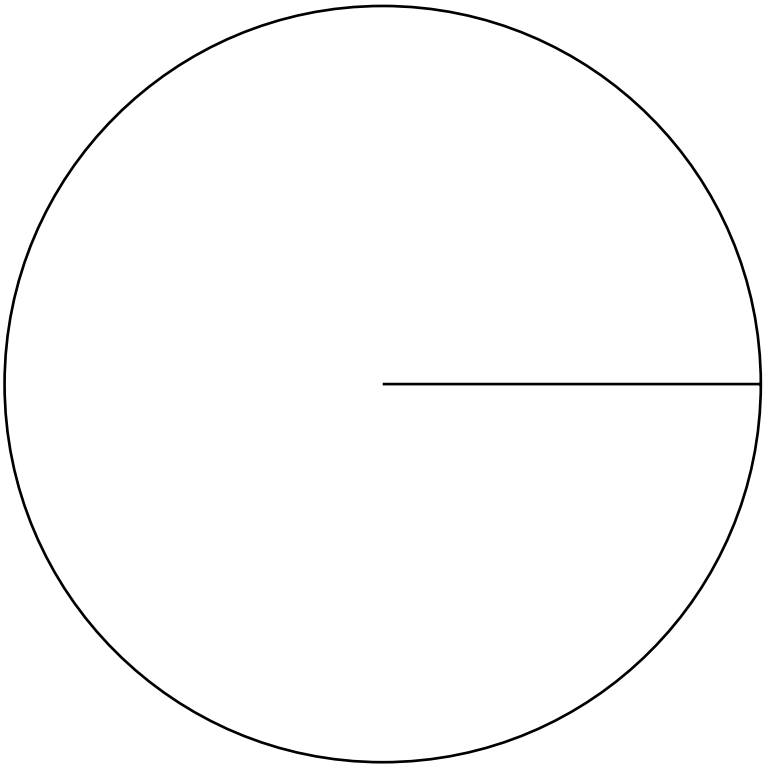
Answer _____ [2]

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(b) The table below gives the estimated population of each of five countries in the year 2000.

Draw a pie chart to illustrate this information.

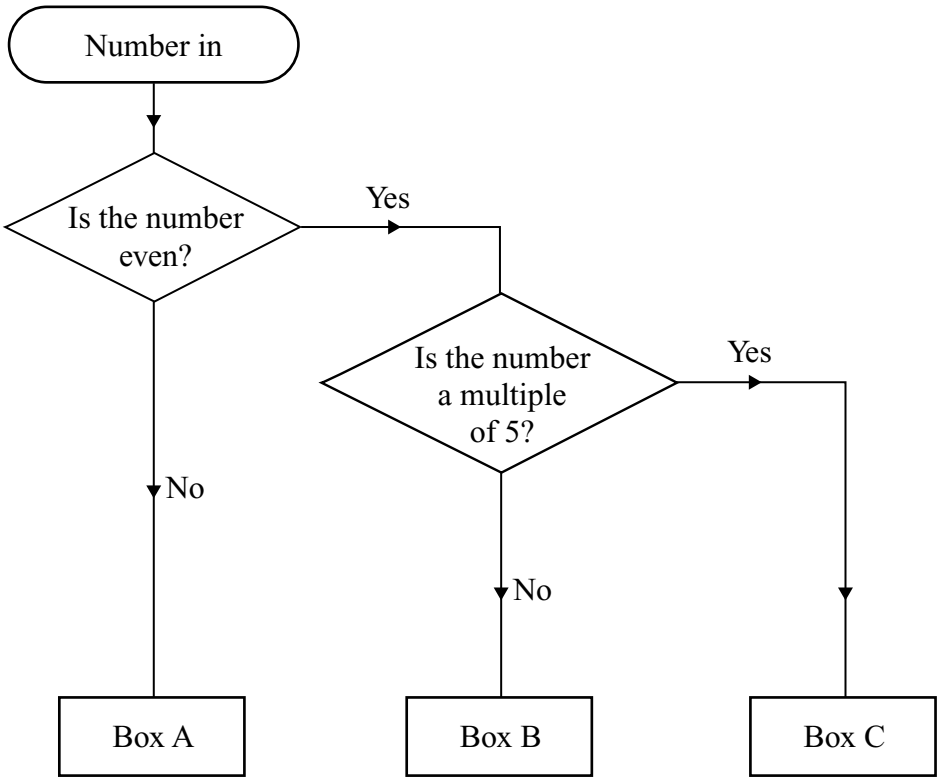
Country	Population (millions)
N. Ireland	1.6
Wales	2.7
Republic of Ireland	3.9
Scotland	5.0
England	46.8



[4]

Examiner Only	
Marks	Remark

10



Using the decision tree diagram, name the box for

(a) 22 Answer Box _____

(b) 31 Answer Box _____

(c) 40 Answer Box _____ [2]

Examiner Only

Marks	Remark

---

11 A boy starts school at 9 am. He finishes at 3.25 pm.
There is a 15 minute mid-morning break and a 50 minute lunch break.
There are 8 lessons in the day, each of the **same** length.
How long is each lesson?
Show your working.

Answer _____ minutes [3]

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12 Calculate

Examiner Only	
Marks	Remark

(a) the cube of 6

Answer _____ [1]

(b) 2^4

Answer _____ [1]

THIS IS THE END OF THE QUESTION PAPER

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GCSE

Mathematics (Modular)

January 2009

Mark Schemes

Issued: April 2009

Rewarding Learning

General Certificate of Secondary Education

January 2009

Mathematics

Module N1 Paper 2

(With calculator)

Foundation Tier

[GMN12]

FRIDAY 9 JANUARY

10.30 am – 11.15 am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS JANUARY 2009

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:

M indicates marks for correct method.

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

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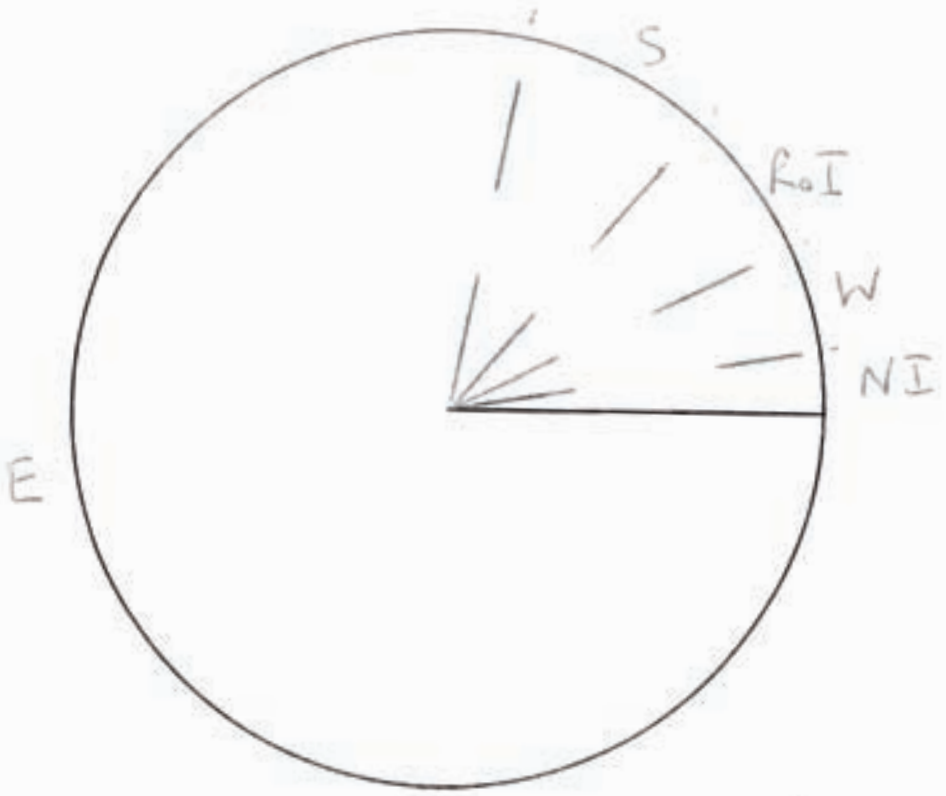
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			AVAILABLE MARKS
1	**(a)** 4	MA1	
	(b) 14	MA1	
	(c) 5 circles	MA1	3
2	**(a)** 19	A1	
	(b) Add on 4	A1	2
3	**(a)** ml	A1	
	(b) kg	A1	2
4	**(a)** $\frac{8}{12}$	MA1	
	$\frac{2}{3}$	A1	
	(b) 25%	A1	
	(c) $\frac{3}{4}$	A1	
	(d) $\frac{4}{12}, \frac{2}{5}$ not equal to $\frac{2}{3}$	A2	6
5	Sum = 20 + 33 + 19 + 22 + 31 + 36 + 28 + 25 + 27 + 34 = 275	M1, A1	
	Mean = $\frac{275}{10}$ = 27.50	MA1	3
6	**(a)** 37 056	A1	
	(b) 10.6929	A1	
	(c) 0.58	A1	
	(d) 51.08	A1	
	(e) 34.6	A1	5

				AVAILABLE MARKS
7	**(a)**	evidence of counting squares	M1	
		$= 58\,cm^2$	A1, A1 (units)	
		or $64 - 6$	MA1	
		$= 58\,cm^2$	A1, A1 (units)	
	(b)	$4 \times 5 \times 6$	M1	
		$= 120$	A1	
	(c)	Any pair of values with a product of 60	A1	6
8		$10 \div 0.85$	MA1	
		11	A1	
		65p **or** £0.65	MA1	3
9	**(a)**	**(i)** 12	MA1	
		(ii) $\frac{30}{360} \times 48 = 4$	M1, A1	
	(b)	See overlay		
		Total = 60 (million)	MA1	
		9.6°, 16.2°, 23.4°, 30°, 280.8°	MA1	
		Sectors, labels	A1, A1	7
10	**(a)**	B		
	(b)	A		
	(c)	C	allow A1 for 2 correct A2	2
11		9.00 am to 3.25 pm = 6 hrs 25 mins	MA1	
		6 hrs 25 mins – 65 mins		
		= 5 hrs 20 mins	MA1	
		$320 \div 8 = 40$ mins	MA1	3
12	**(a)**	216	A1	
	(b)	16	A1	2
			Total	**44**

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GCSE MATHEMATICS JANUARY 2009
MODULE N1-2
OVERLAY QUESTION 9



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