CCEA GCSE MATHEMATICS (MODULAR)

MATHS



EXAM QUESTION PACK

MODULE N5 PAPER 1 (NON-CALCULATOR) FOUNDATION TIER GMN51 PAPERS

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Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

MONDAY 16 JANUARY

9.15 am–10.15 am

GMN51

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

TIME

1 hour.

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 fifteen** 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.

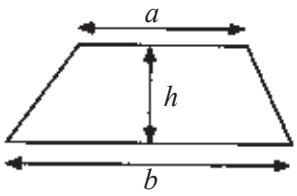
INFORMATION FOR CANDIDATES

The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

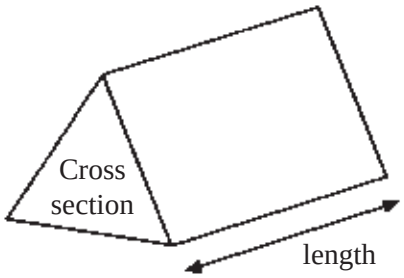
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Formula Sheet

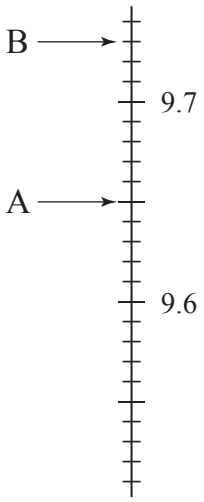
Area of trapezium $= \frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



1



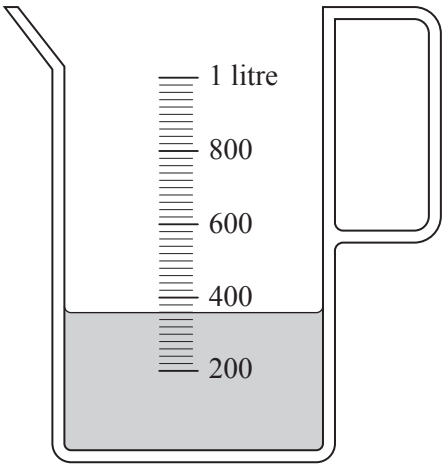
(a) (i) What is the scale reading shown by arrow A?

Answer _____ [1]

(ii) What is the difference between the scale readings of A and B?

Answer _____ [2]

(b)



(i) How many millilitres of water are in the jug?

Answer _____ ml [1]

(ii) Another 240 millilitres of water are added to the jug. Shade to show the level of water now in the jug. [1]

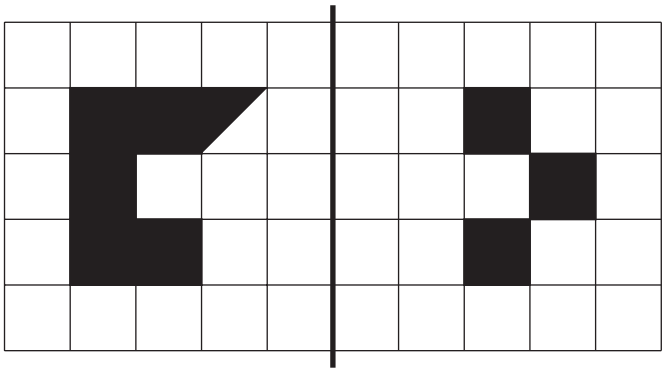
Examiner Only

Marks	Remark

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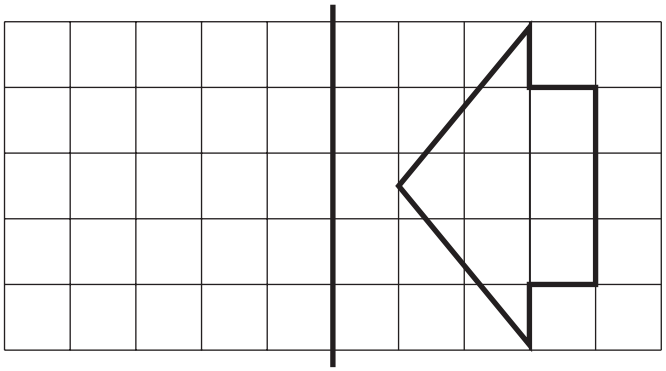
Examiner Only	
Marks	Remark

2 **(a)** Complete the reflection of the shape in the mirror line.



[2]

(b) Draw the reflection of the shape in the mirror line.



[2]

3

Impossible	Unlikely	Evens	Likely	Certain

Choose a word from the box which best describes the likelihood of each of these events.

(a) The next baby to be born in the world will be a girl.

Answer _____ [1]

(b) The next person you meet will be left-handed.

Answer _____ [1]

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(c) A number less than 5 will be scored when a normal six-sided dice is rolled.

Answer _____ [1]

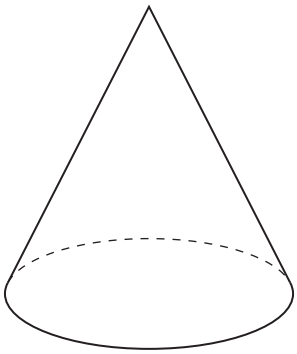
(d) 31st December comes before 1st January in the same year.

Answer _____ [1]

---

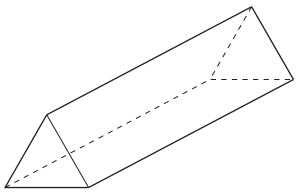
4 Name the shapes below

(a)



Answer _____ [1]

(b)



Answer _____ [1]

(c)



Answer _____ [1]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

5 **(a)** Estimate 98×7.1

Answer _____ [2]

(b) Estimate how many packets of crisps costing 38p each could be bought for £4.

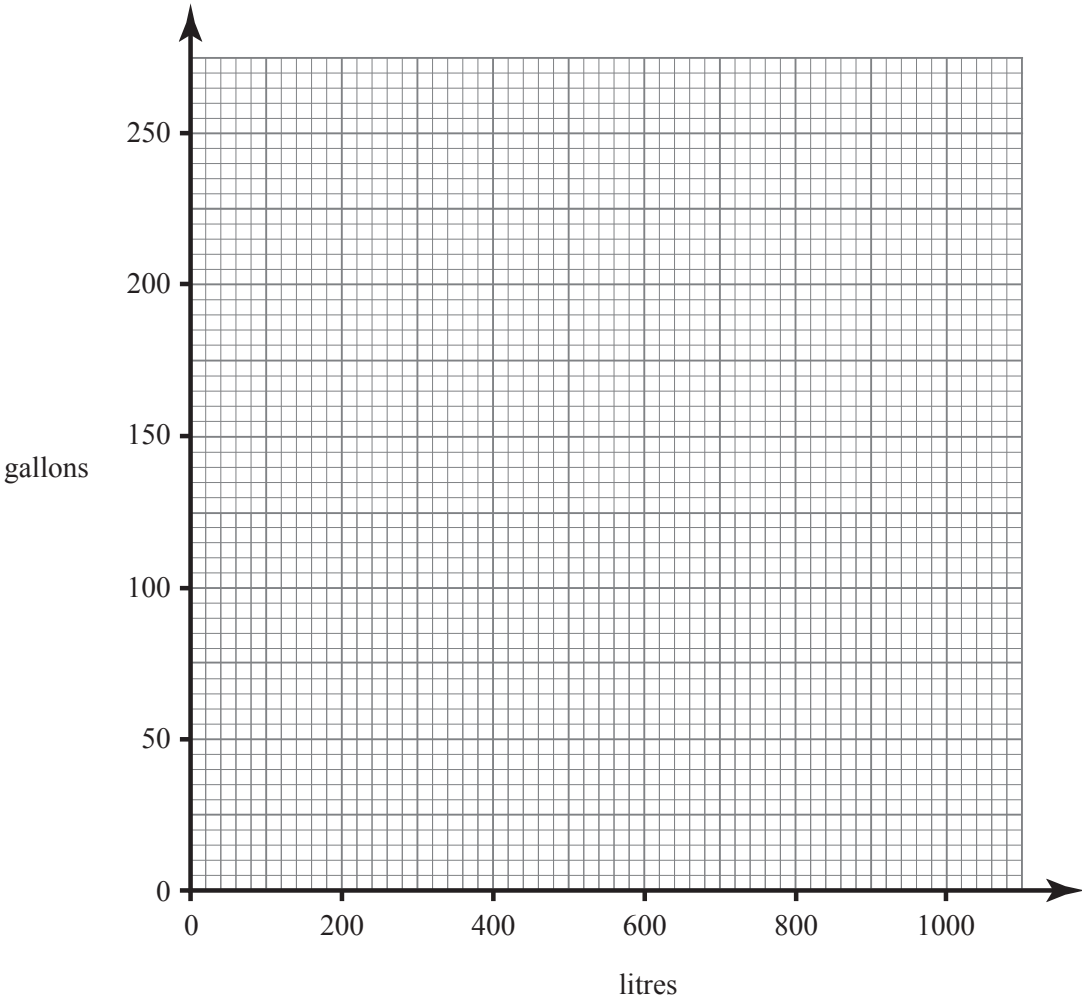
Answer _____ packets [2]

---

6 Oil is sold in litres or gallons.

Litres	0	500	1000
Gallons	0	110	220

(a) Use the values in the table to draw the conversion graph on the grid below.



[3]

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Examiner Only	
Marks	Remark

(b) Use your graph to convert 100 gallons to litres.

Answer _____ litres [1]

(c) Alan bought 750 litres of oil and Brian bought 150 gallons of oil.

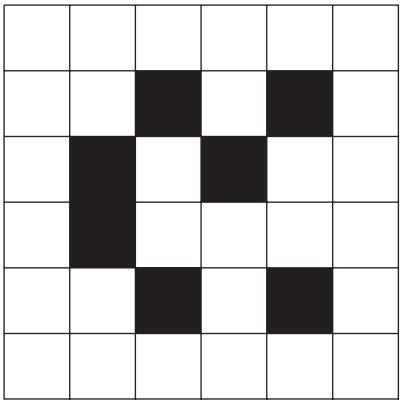
Who bought more oil? Give a reason for your answer.

Answer _____ because _____

_____ [2]

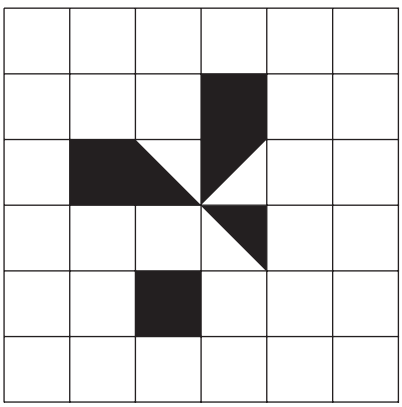
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7 **(a)** Shade **one** more square so that the pattern has only one line of symmetry.



[1]

(b) Shade **one more triangle** and **one more square** so that the shape has rotational symmetry of order 4.



[2]

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Examiner Only	
Marks	Remark

8 Circle the correct answer to complete each sentence.

(a) 14 pints of milk is approximately

2 litres 8 litres 20 litres [1]

(b) The length of a 25 metre swimming pool is approximately

20 feet 50 feet 80 feet [1]

(c) The weight of a hen's egg is approximately

80 pounds 80 grams 80 ounces [1]

---

9 **(a)** Calculate $6 + 8 \div 2$

Answer _____ [1]

(b) Insert brackets into this calculation to make it correct.

$$14 - 10 \div 2 + 3 = 6$$ [1]

(c) Insert the correct symbol from $+$, $-$, $\times$ or $\div$ into the box in order to make this calculation correct.

$$5 + 3(10 - 6 \square 2) = 26$$ [1]

(d) Calculate

(i) $(-14) \div 2$ Answer _____ [1]

(ii) $(-6) \times (-4)$ Answer _____ [1]

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10 £6 000 is invested for 2 years at 4% per year **simple interest**. How much money **in total** is there at the end of the 2 years?

Examiner Only

Marks	Remark

Answer £ _____ [2]

---

11 **(a)** Use the formula R = 4S + 7T to find T when R = 64 and S = 9

Answer T = _____ [3]

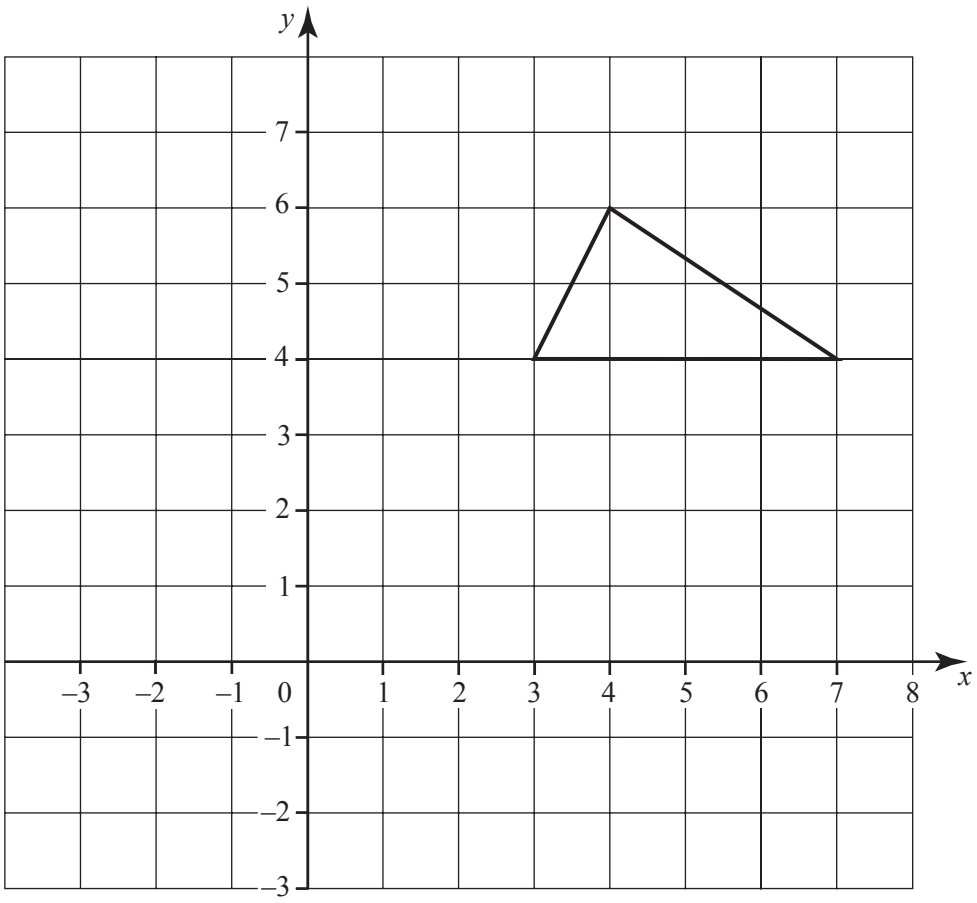
(b) $a = \dfrac{b-c}{d}$

Calculate the value of a when $b = -6$, $c = 10$ and $d = 4$

Answer a = _____ [2]

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12



Draw the image of the triangle after a translation 6 left and 1 up. [2]

Examiner Only	
Marks	Remark

13 **(a)** Given that $\frac{1560}{24} = 65$ write down the answer to

(i) $\frac{1560}{240}$ Answer _____ [1]

(ii) 2.4×6.5 Answer _____ [1]

(b) Estimate $\frac{213}{0.39}$

Show your working.

Answer _____ [2]

(c) Write 0.45555… as a recurring decimal.

Answer _____ [1]

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Examiner Only	
Marks	Remark

14 Boris plays a game of chess with his friend Gary.

He states, "I can win, draw or lose, so the probability that I will win must be $\frac{1}{3}$".

Explain why Boris is wrong.

_____

_____ [2]

15 Shade in the region of points which are nearer to B than A and less than 3 cm from A. [3]

B •

A •

THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
January 2012

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

MONDAY 16 JANUARY

9.15 am – 10.15 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 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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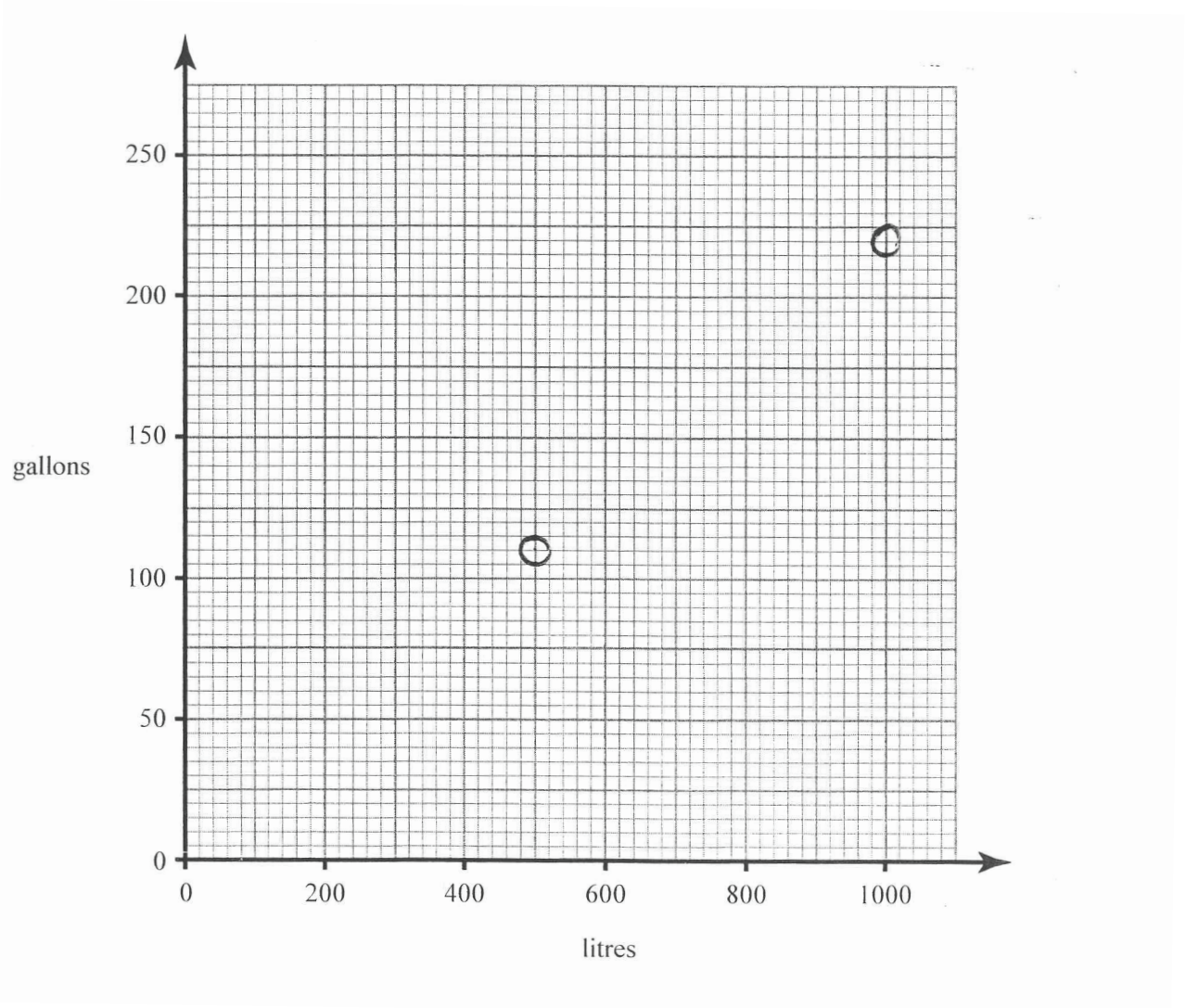
				AVAILABLE MARKS
1	**(a)** **(i)**	9.65	A1	
	(ii)	9.73 – 9.65 = 0.08	M1 A1	
	(b) **(i)**	360	A1	
	(ii)	Shading to 600 ml	A1	5
2	**(a)**	2 squares 1 triangle	A1 A1	
	(b)	Correct reflection (allow A1 wrong mirror line)	A2	4
3	**(a)**	evens	A1	
	(b)	unlikely	A1	
	(c)	likely	A1	
	(d)	impossible	A1	4
4	**(a)**	Cone	A1	
	(b)	Triangular prism	A1	
	(c)	Cylinder	A1	3
5	**(a)**	100×7 700	MA1 A1	
	(b)	$400 \div 40$ 10	MA1 A1	4
6	**(a)**	Correct points, line	A2, A1	
	(b)	455 ± 10	A1	
	(c)	Alan 750 litres = 165 gallons or 150 gallons = 680 litres (allow tolerance)	A1 A1	6
7	**(a)**	Correct square	A1	
	(b)	Correct triangle, correct square	A1, A1	3

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			AVAILABLE MARKS
8	**(a)** 8 litres	A1	
	(b) 80 feet	A1	
	(c) 80 grams	A1	3
9	**(a)** 10	A1	
	(b) $14 - (10 \div 2 + 3) = 6$	A1	
	(c) $\div$	A1	
	(d) **(i)** -7	A1	
	(ii) 24	A1	5
10	4% of £6000 = £240 or 8% of £6000 = £480	A1	
	£6000 + 2 × 240 = £6480	MA1	2
11	**(a)** $64 = 36 + 7T$	MA1	
	$28 = 7T$	MA1	
	$T = 4$	MA1	
	(b) $\frac{-16}{4}$	MA1	
	-4	A1	5
12	6 left, 1 up	A1, A1	2
13	**(a)** **(i)** 6.5	A1	
	(ii) 15.6	A1	
	(b) $\frac{200}{0.4}$	MA1	
	$= 500$	A1	
	(c) $0.4\dot{5}$	A1	5
14	E.g. only true if there is an equally likely chance of each outcome	A2	2
15	Circular arc radius 3 cm centre A	A1	
	Perpendicular bisector of AB	A1	
	Between arc and bisector shaded	A1	3
		Total	**56**

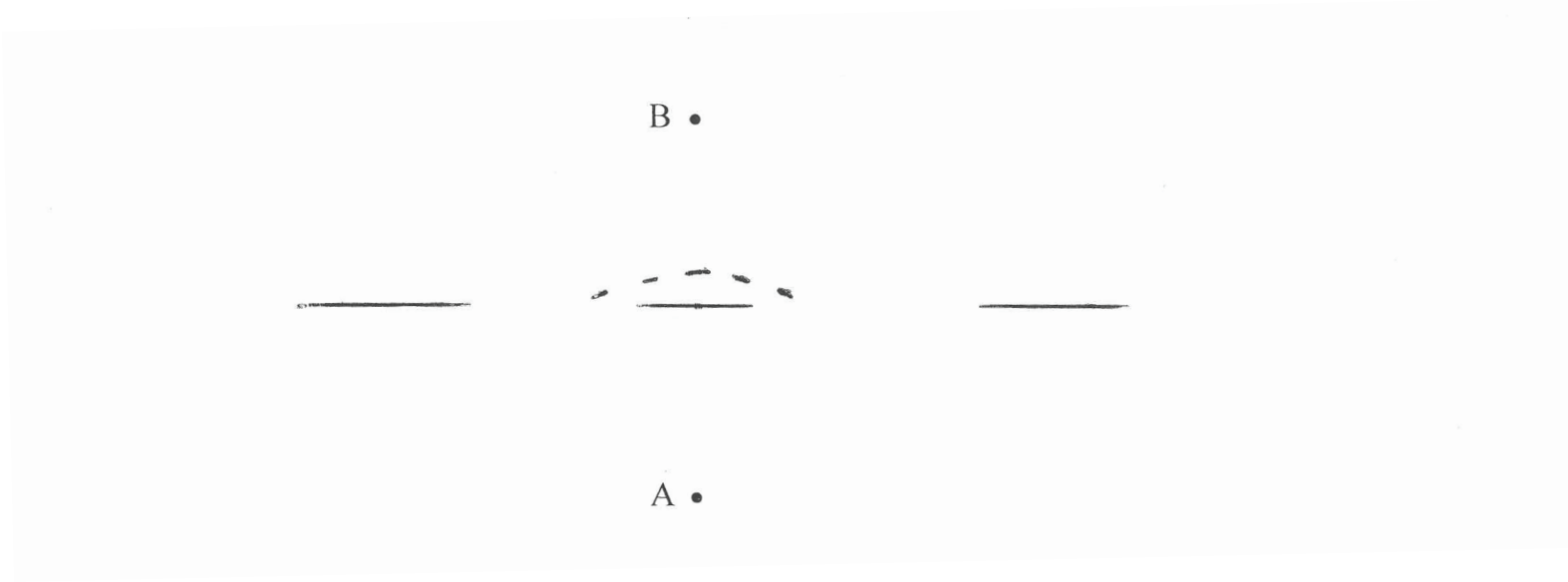
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GCSE MATHEMATICS JANUARY 2012
MODULE N5–1
OVERLAY QUESTION 6



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GCSE MATHEMATICS JANUARY 2012
MODULE N5–1
OVERLAY QUESTION 14



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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2011

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier



GMN51

[GMN51]

MONDAY 6 JUNE

1.30 pm – 2.30 pm

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Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Total Marks	

Examiner Number

TIME

1 hour.

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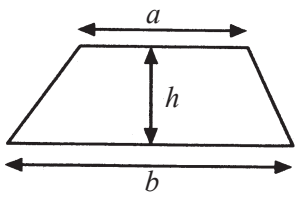
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JUNE11GMN51

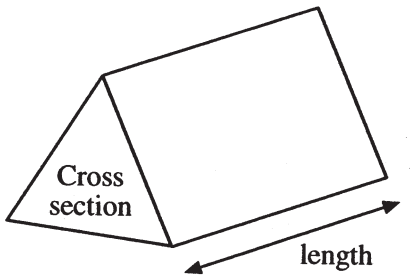
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Formula Sheet

Area of trapezium $= \frac{1}{2}(a+b)h$



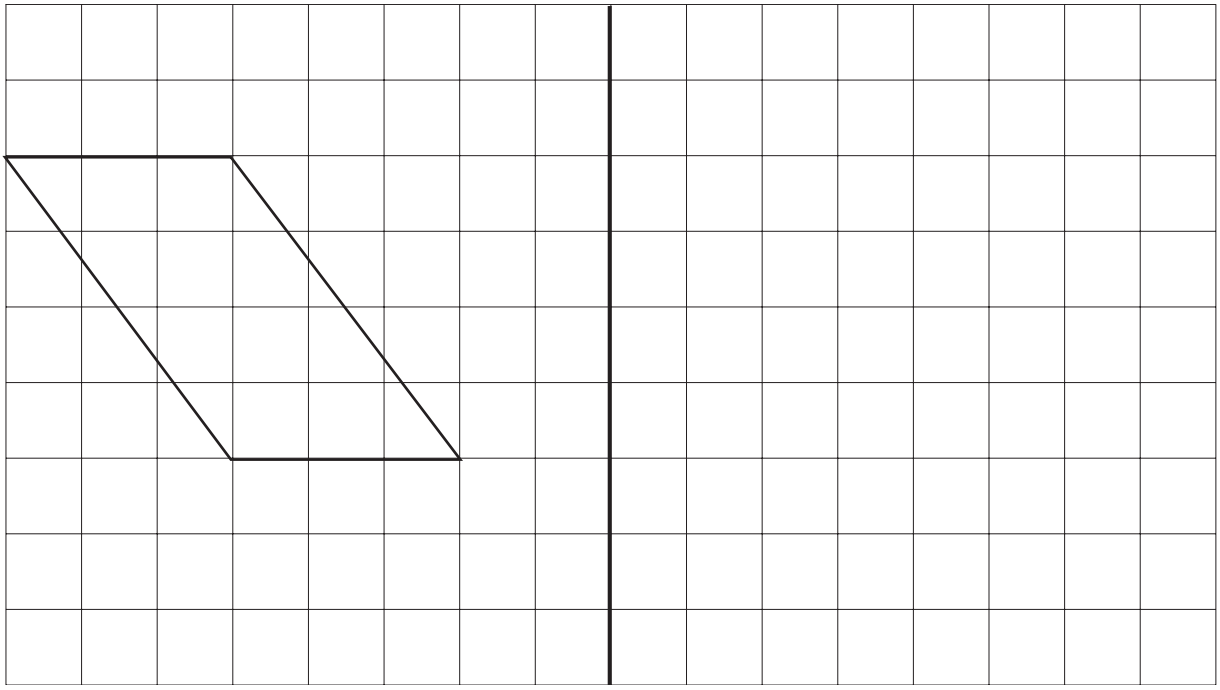
Volume of prism = area of cross section × length



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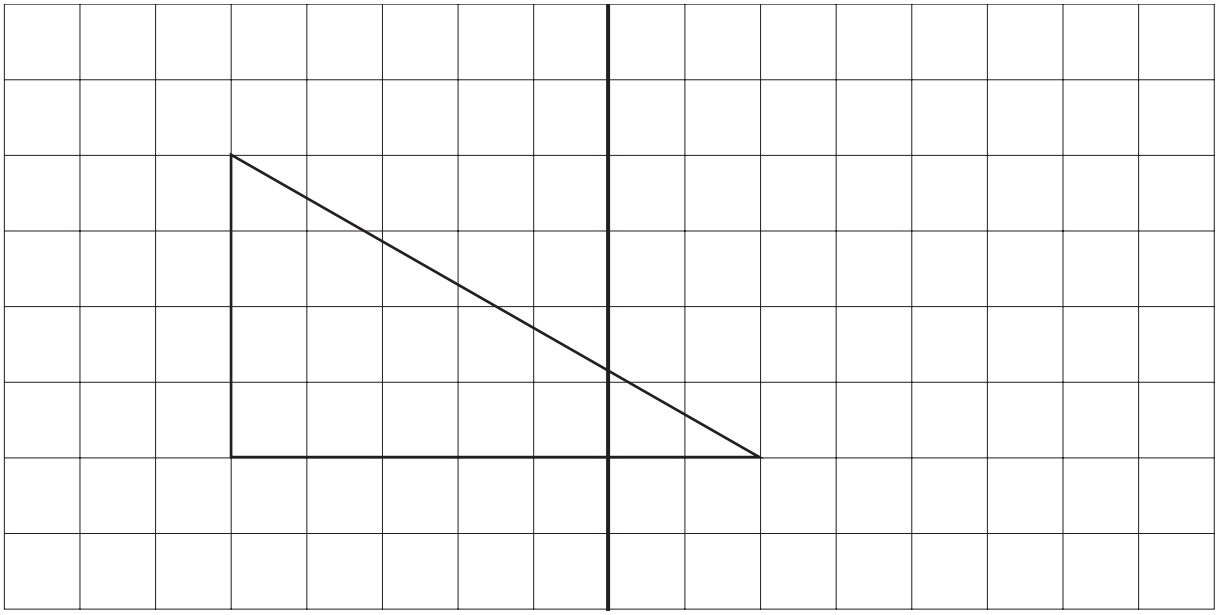
1 Reflect each of the shapes in the mirror line.

(a)



mirror line [2]

(b)



mirror line [2]

Total Question 1	

2 Choose from

Impossible Certain Likely Unlikely

Very unlikely Evens Very likely

to describe the probability of each of the following. Explain your answers.

(a) An ordinary dice will land on an odd number.

Answer _____ because _____

_____ [2]

(b) You will sleep some time this week.

Answer _____ because _____

_____ [2]

Total Question 2

3 TV DEAL

A	**B**
Pay £120 deposit and £20 per month for 12 months	Pay nothing now One payment of £400 in six months time

Which is the cheaper way to pay for a TV and by how much?

Answer _____ by £ _____ [4]

Total Question 3

Examiner Only

Marks | Remark

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4 **(a)** **Estimate** the total length of 82 cars whose average length is 3.8 metres.

Answer _____ m [2]

(b) **Estimate** the area of a rectangular pond with length 19.6 metres and breadth 7.8 metres.

Answer _____ m^2 [2]

(c) **Estimate** $\sqrt{79}$

Answer _____ [1]

(d) **Estimate** how many toys costing £5.95 each could be bought for £55.

Answer _____ toys [2]

Examiner Only	
Marks	Remark
Total Question 4	

Examiner Only	
Marks	Remark

5 **(a)** Write the word **more** or **less** in the blank space to complete this sentence.

A gallon is _____ than a litre. [1]

(b) The formula

Number of gallons = (Number of litres × two) ÷ nine

gives an approximation for converting between litres and gallons.

(i) Use the formula to convert 36 litres to gallons.

Answer _____ gallons [2]

(ii) If G is the number of gallons and L is the number of litres write **a formula**, in its simplest form, for G in terms of L.

Answer _____ [3]

Total Question 5

6 Which is heavier, a 5 kilogram bag of potatoes or a 10 pound bag of potatoes?

Explain your answer.

Answer _____ because _____

_____ [2]

Total Question 6

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7 Calculate

(a) $8 + 4 \div 2$

Answer _____ [1]

(b) $4 + 2(9 - 3)$

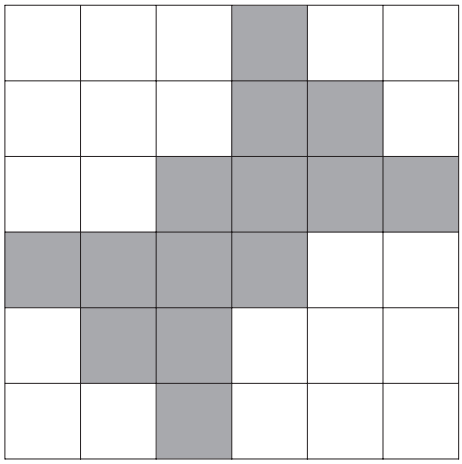
Answer _____ [1]

(c) $5 \times 2 + 14 \div 2$

Answer _____ [1]

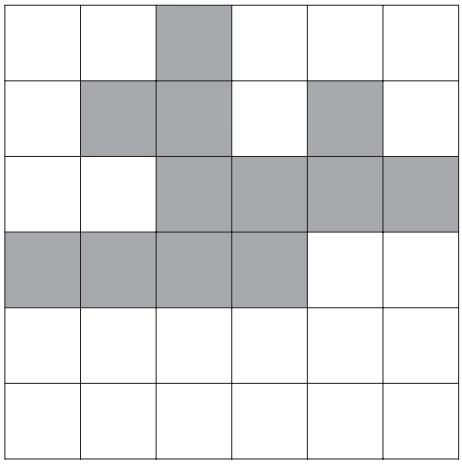
Examiner Only	
Marks	Remark
Total Question 7	

8 **(a)** **(i)** Draw all the lines of symmetry on the shaded shape.



[2]

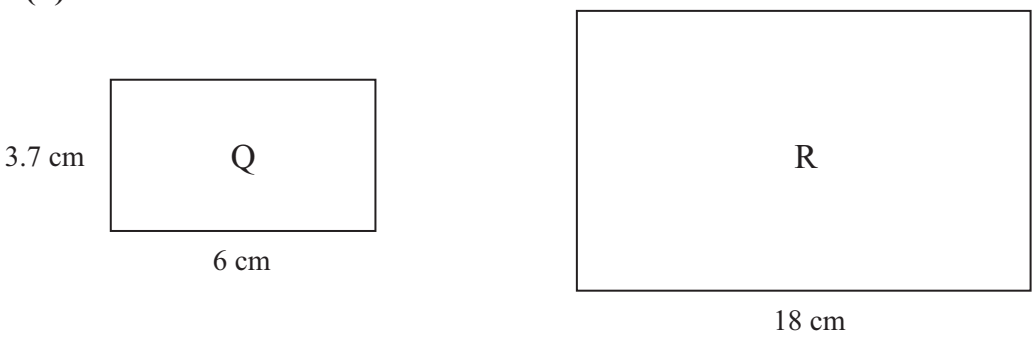
(ii) Shade 4 squares on the grid below so that the pattern will have rotational symmetry of order 4.



[2]

Examiner Only	
Marks	Remark

(b)



The diagram shows two rectangles. (Not drawn accurately)

Rectangle R is an enlargement of rectangle Q.

(i) What is the scale factor of the enlargement?

Answer _____ [1]

(ii) How many times bigger is the area of rectangle R than the area of rectangle Q?

Answer _____ [2]

Total Question 8

---

9 Rewrite $c - 2 = 10 - b$ to make b the subject.

Write your answer in its simplest form.

Answer $b =$ _____ [2]

Total Question 9

Examiner Only

Marks | Remark

10 **(a)** Write down the reciprocal of 3

Answer _____ [1]

(b) Calculate

$(-45) \div (-9)$

Answer _____ [1]

(c) Given that $84 \times 356 = 29904$, find

$$\frac{29904}{8.4}$$

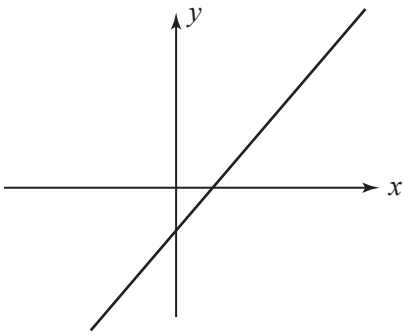
Answer _____ [1]

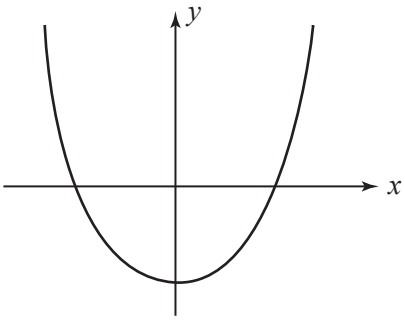
Examiner Only	
Marks	Remark
Total Question 10	

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11 $y = x^2 + 2$ $y = x^2 - 2$ $y = x - 2$

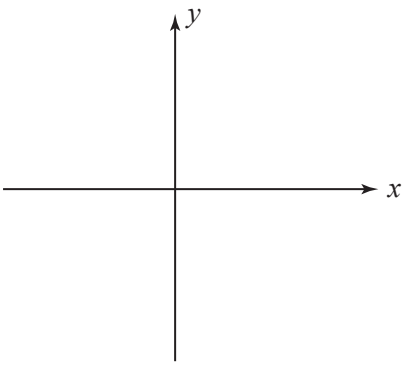
(a) Below are two graphs. Choose the correct equation from the three listed above to match each graph.





Equation: _____ Equation: _____ [2]

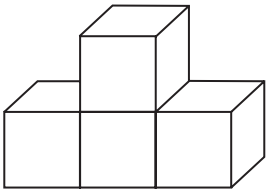
(b) Sketch the graph of the remaining equation.



[1]

Examiner Only	
Marks	Remark
Total Question 11	

12 Below is a sketch of a 3-D shape.



SIDE

FRONT

Draw **(a)** the plan,

[1]

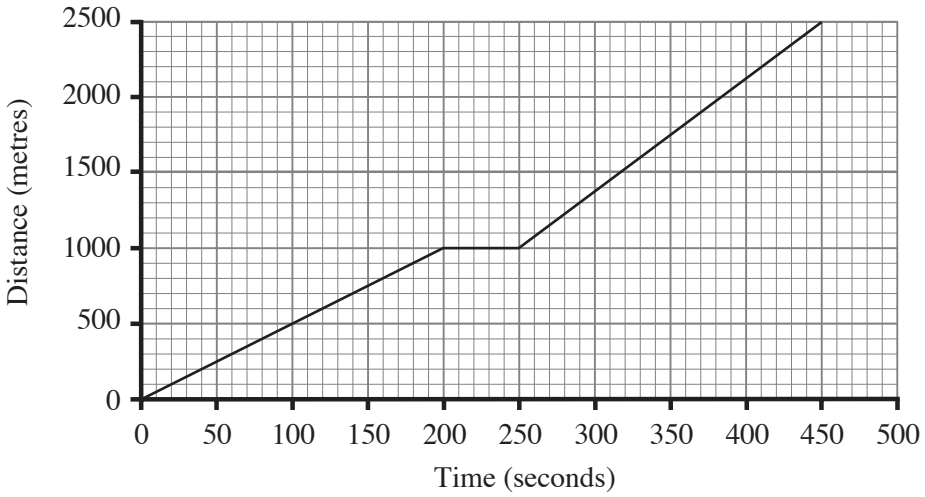
(b) the side elevation.

[1]

Examiner Only	
Marks	Remark
Total Question 12	

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13 The graph illustrates Pete's journey as he cycled from home to school.



(a) How far did he travel in the first minute?

Answer _____ m [1]

(b) He stopped at a shop on the way to school.

Calculate his average speed for the journey **between the shop and the school**.

Answer _____ m/s [2]

Total Question 13

---

14 Simplify $\dfrac{m^7}{m \times m^2}$

Answer _____ [2]

Total Question 14

15 Jack divided marbles between himself and Jill in the ratio 4 : 3

Jack then had 84 marbles.

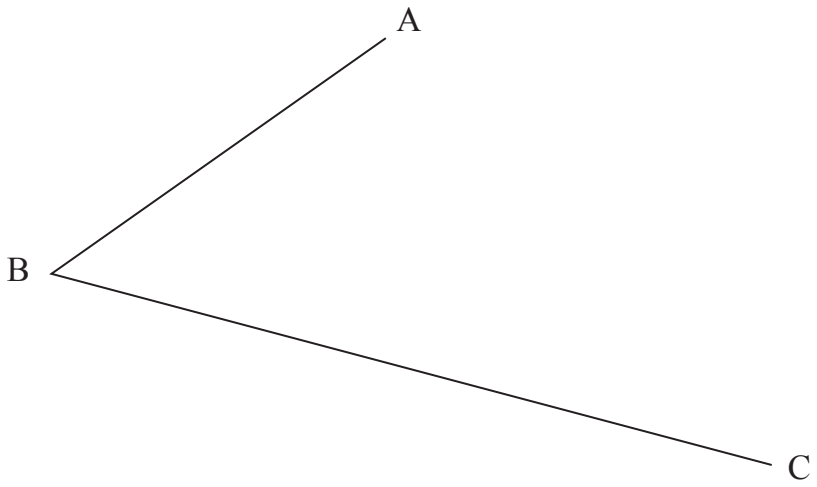
How many marbles were there in total?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 15	

16 Use ruler and compasses to construct the bisector of the angle ABC.

You must show all construction lines.



[2]

THIS IS THE END OF THE QUESTION PAPER

Total Question 16	

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111334

Rewarding Learning

General Certificate of Secondary Education
2011

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

MONDAY 6 JUNE

1.30 pm – 2.30 pm

MARK SCHEME

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Introduction

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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.

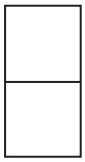
(ix) Anything in the mark scheme which is in brackets (...) is not required for the mark to be earned, but if present it must be correct.

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

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				AVAILABLE MARKS
1	**(a)**	Correct reflection	MA2	
		(1 mark for 3 vertices correct)		
	(b)	Correct reflection	MA2	4
		(1 mark for 2 vertices correct)		
2	**(a)**	evens, 3 chances out of 6 or 3 evens and 3 odds	A1 A1	
	(b)	certain, I need to sleep every day or I get tired.	A1 A1	4
3		£20 × 12 = £240	MA1	
		£240 + £120 = £360	MA1	
		A by £40	M1 A1	4
4	**(a)**	80 × 4 = 320	M1 A1	
	(b)	20 × 8	MA1	
		160	A1	
	(c)	9 or 8.9	A1	
	(d)	55 ÷ 6 → 9	M1 A1	7
5	**(a)**	more	A1	
	(b) **(i)**	(36 × 2) ÷ 9	M1	
		= 8	A1	
	(ii)	G = (L × 2) ÷ 9	A2 [1 for "G =" and 1 for RHS]	
		$G = \frac{2L}{9}$	A1	6
6		5 kg is heavier as 5 kg ≅ 11 pounds	MA2	2
		(1 mark for knowing that 1 kg ≅ 2.2 pounds)		

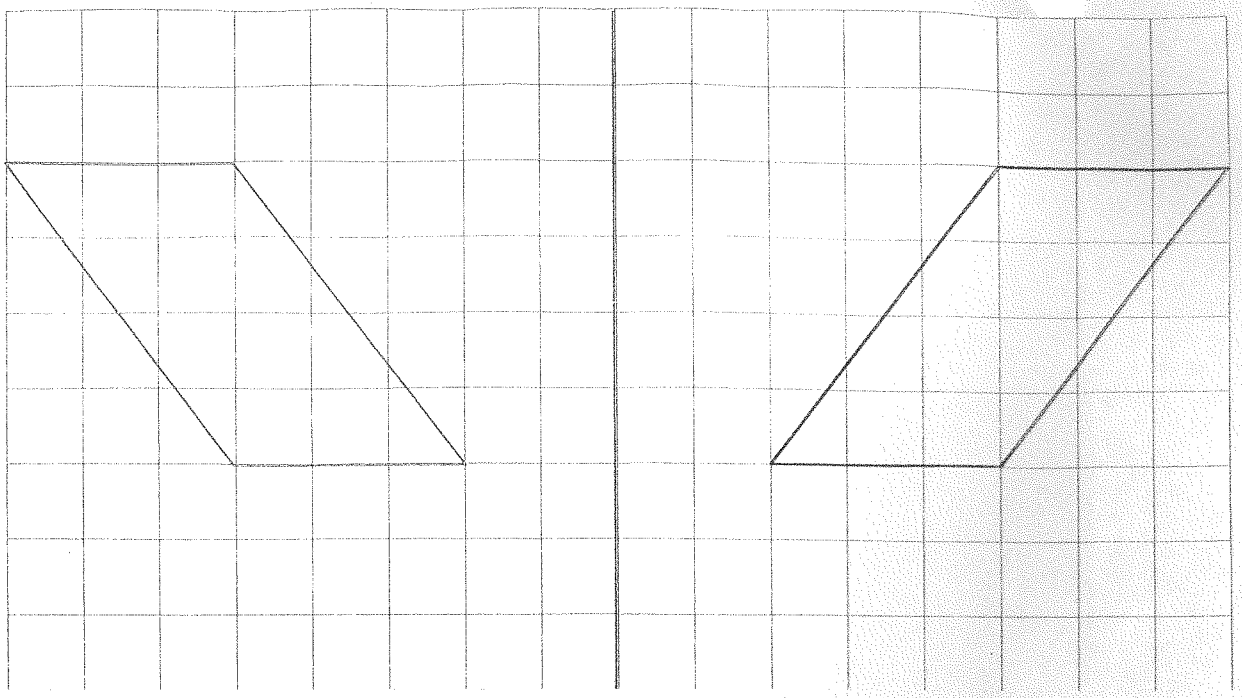
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			AVAILABLE MARKS
7	**(a)** 10	A1	
	(b) 16	A1	
	(c) 17	A1	3
8	**(a)** **(i)** 1 mark for each correct line of symmetry	A1 A1	
	(ii) 2 marks for all four correct squares shaded	A2	
	(1 mark for two correct squares shaded)		
	(b) **(i)** 3	A1	
	(ii) 9	A2	7
	(Allow 1 mark for attempt to use both areas correctly)		
9	$c - 2 + b = 10$	MA1	
	$b = 12 - c$	MA1	2
10	**(a)** $\frac{1}{3}$	A1	
	(b) 5	A1	
	(c) 3560	A1	3
11	**(a)** $y = x - 2$	A1	
	$y = x^2 - 2$	A1	
	(b) $y = x^2 + 2$ correctly sketched	MA1	3
12	**(a)** 	A1	
	(b) 	A1	2

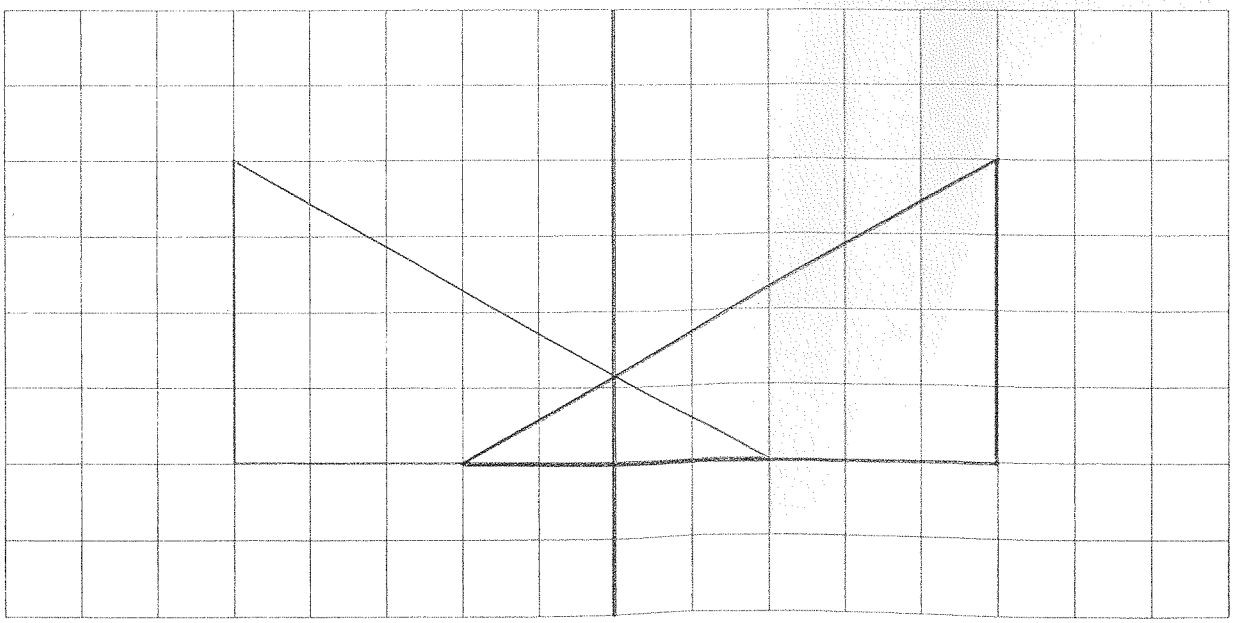
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			AVAILABLE MARKS
13	**(a)** 300	A1	
	(b) 1500/200	MA1	
	$= 7.5$	A1	3
14	$\frac{m^7}{m^3}$	MA1	
	$= m^4$	MA1	2
15	$84 \div 4 = 21$ or $84 \times \frac{3}{4} = 63$ or 84:63	MA1	
	147	MA1	2
16	Correct construction arcs	MA1	
	Correct angle bisector drawn	A1	2
		Total	**56**

GCSE MATHEMATICS SUMMER 2011
MODULE N5-1
OVERLAYS QUESTION 1

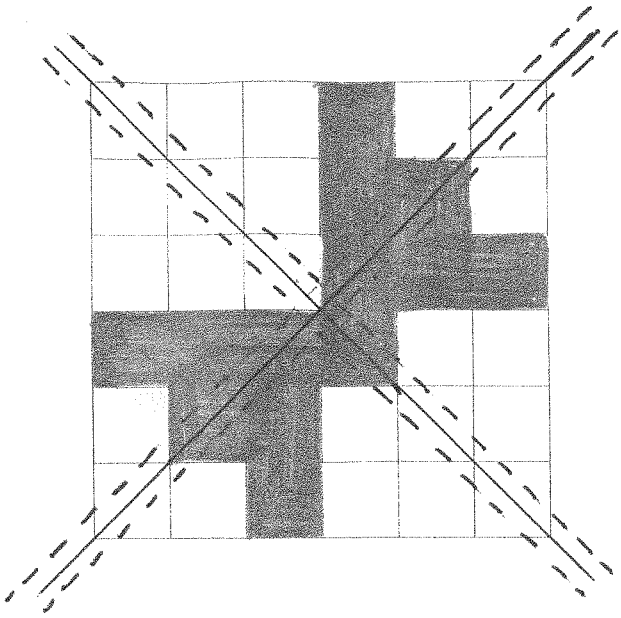


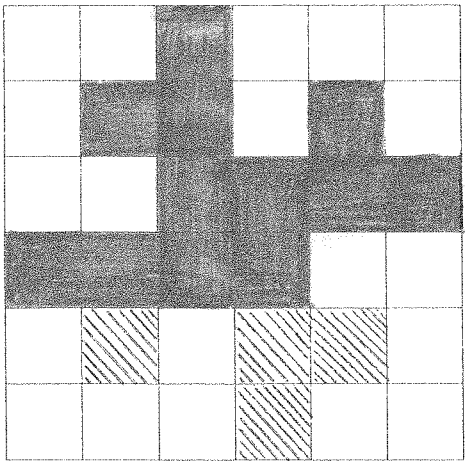
mirror line



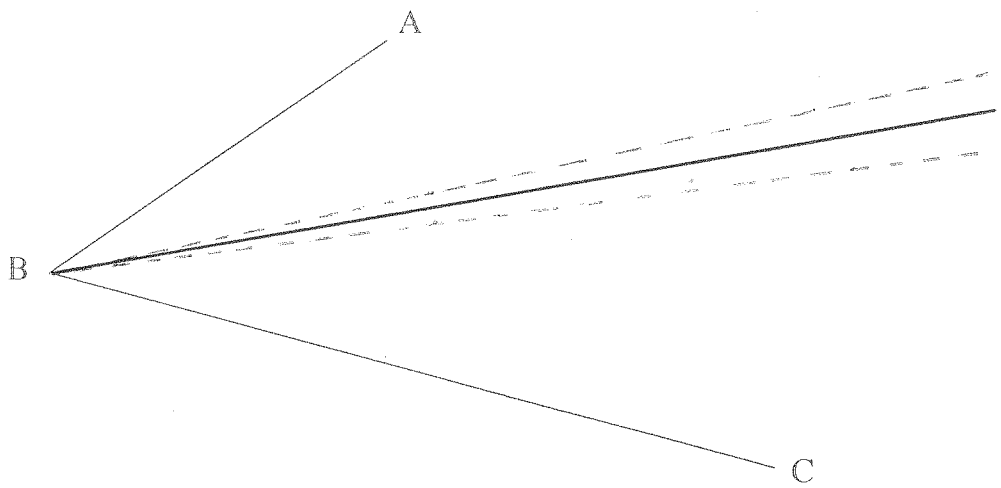
mirror line

GCSE MATHEMATICS SUMMER 2011
MODULE N5-1
OVERLAYS QUESTION 8





GCSE MATHEMATICS SUMMER 2011
MODULE N5-1
OVERLAYS QUESTION 15



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

FRIDAY 14 JANUARY

9.15 am – 10.15 am

GMN51

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

TIME

1 hour.

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 fifteen** 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.

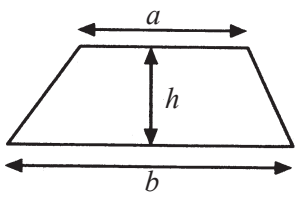
INFORMATION FOR CANDIDATES

The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

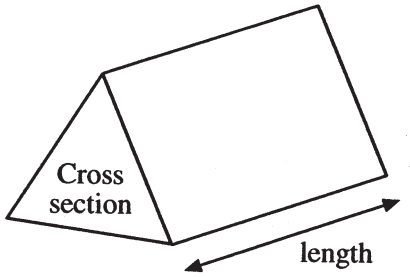
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Formula Sheet

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

1 Complete each sentence with the name of a 3D mathematical shape.

(a) The chocolate box is a



_____ [1]

(b) The popcorn packet is a



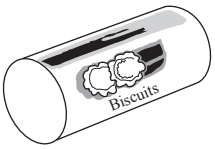
_____ [1]

(c) The globe is a



_____ [1]

(d) The biscuit packet is a



_____ [1]

(e) Write down the name of a real life object which is a cuboid.

Answer _____ [1]

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Examiner Only	
Marks	Remark

2 **(a)** In an examination hall the desks are arranged in rows.

Each row has 28 desks and there are 14 rows.

Estimate the number of desks in the examination hall.

Answer _____ desks [2]

(b) The memory card in a digital camera contains 112 pictures.

A photo booth charges 18p per print for photographs.

Estimate how much it would cost to print out all the pictures on the memory card.

Answer £ _____ [2]

(c) A shop is selling low-energy light bulbs for £2.89 each.

Estimate how many I can buy for £20

Answer _____ bulbs [2]

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Examiner Only	
Marks	Remark

3 Choose from

Impossible	Certain	Likely	Unlikely	Evens

to describe the probability of each of the following.

(a) An ordinary coin when tossed will show "heads".

Answer _____ [1]

(b) Everyone in a class at school will have the same colour of hair.

Answer _____ [1]

(c) You will pick a black ball out of a bag only containing black balls.

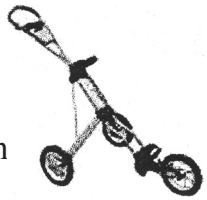
Answer _____ [1]

(d) An ordinary dice will land on an 8.

Answer _____ [1]

---

4 **(a)** A factory makes golf trolleys. The number of wheels ordered is given by the formula.



Number of Wheels Ordered = Three × Number of Trolleys + Ten

(i) How many wheels are ordered for 80 trolleys?

Answer _____ [2]

(ii) Why do you think 10 has been added in the formula?

Answer _____ [1]

(b) B = 3D

Find the value for B when D = 3.5

Answer B = _____ [1]

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Examiner Only	
Marks	Remark

5 **(a)**

INCHES	FEET	OUNCES	POUNDS	PINTS	GALLONS

Choose the unit most likely to be used for measuring

(i) the width of a room, Answer _____ [1]

(ii) the capacity of a kettle. Answer _____ [1]

(b) Given that 2.2 pounds is approximately equal to 1 kg, calculate the number of pounds in 6 kg.

Answer _____ pounds [2]

---

6 **(a)** Pete says that the square root of 55 lies between 7 and 8

Is he right? Explain your answer.

Answer _____ because _____

_____ [1]

(b) Calculate **(i)** $6 + 8 \times 2$

Answer _____ [1]

(ii) $10 \div 5 + 8 \div 2$

Answer _____ [1]

(iii) $4 \times 12 \div 8 - 6$

Answer _____ [1]

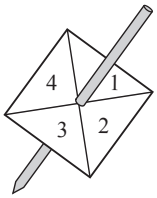
Examiner Only	
Marks	Remark

7 The table gives the names of some quadrilaterals and their symmetries. Complete the table.

Name of Quadrilateral	Number of Lines of Symmetry	Order of Rotational Symmetry
Square	4	4
_____	2	2
Parallelogram	_____	_____

[3]

8 Mary throws an ordinary dice and John spins a four-sided spinner with the digits 1, 2, 3 and 4



(a) Complete the following table showing the **totals** of the scores from the dice and the spinner.

SPINNER \ DICE	1	2	3	4	5	6
1						
2						
3						
4						

[2]

(b) Calculate the probability of a total score that is less than 7

Answer _____ [2]

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Examiner Only	
Marks	Remark

9 **(a)** "Any even number greater than 2 can be written as the sum of two prime numbers".

Fill in the blanks to give **two** examples to illustrate this statement.

$6 = 3 + ____$, $8 = ____ + ____$ [1]

(b) Use the number 10 to show that the following statement is **not** true.

"Any even number greater than 2 can be written as the sum of two prime numbers in only one way". [2]

(c) "Any whole number greater than 5 can be written as the sum of three prime numbers".

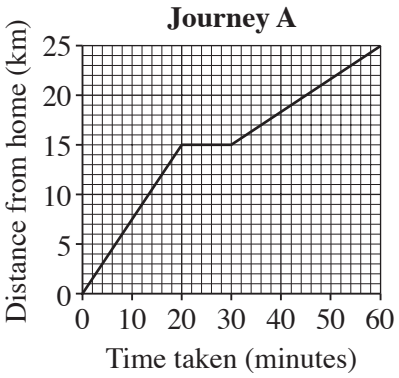
Give **two** examples to illustrate this statement.

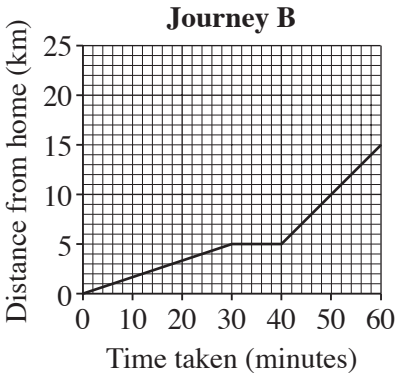
Answer **(i)** _____ **(ii)** _____ [1]

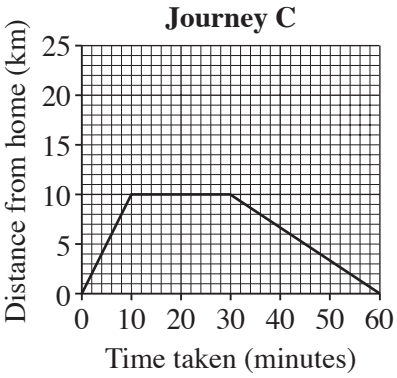
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10 The graphs show 3 different journeys by bicycle.









(a) Which of the journeys has the longest stopping time?

Answer _____ [1]

(b) Which graph could describe the following journey?

"Ryan cycles uphill. He then rests before continuing his journey downhill".

Answer _____ [1]

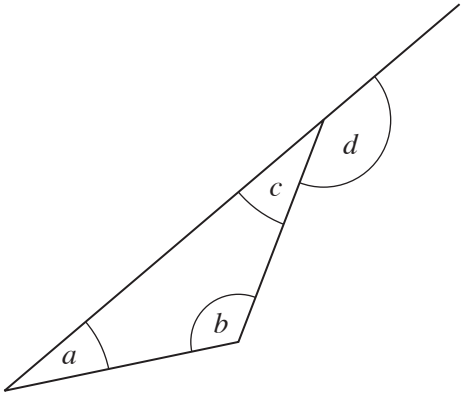
(c) What is the average speed for the first part of **Journey B**?

Answer _____ km/h [2]

Examiner Only	
Marks	Remark

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11



Prove that angle d = angle a + angle b.

[3]

Examiner Only	
Marks	Remark

12 In a school there are 480 girls. Of these 60 are left handed. Find the probability that a girl chosen at random in this school is left handed.

Answer _____ [1]

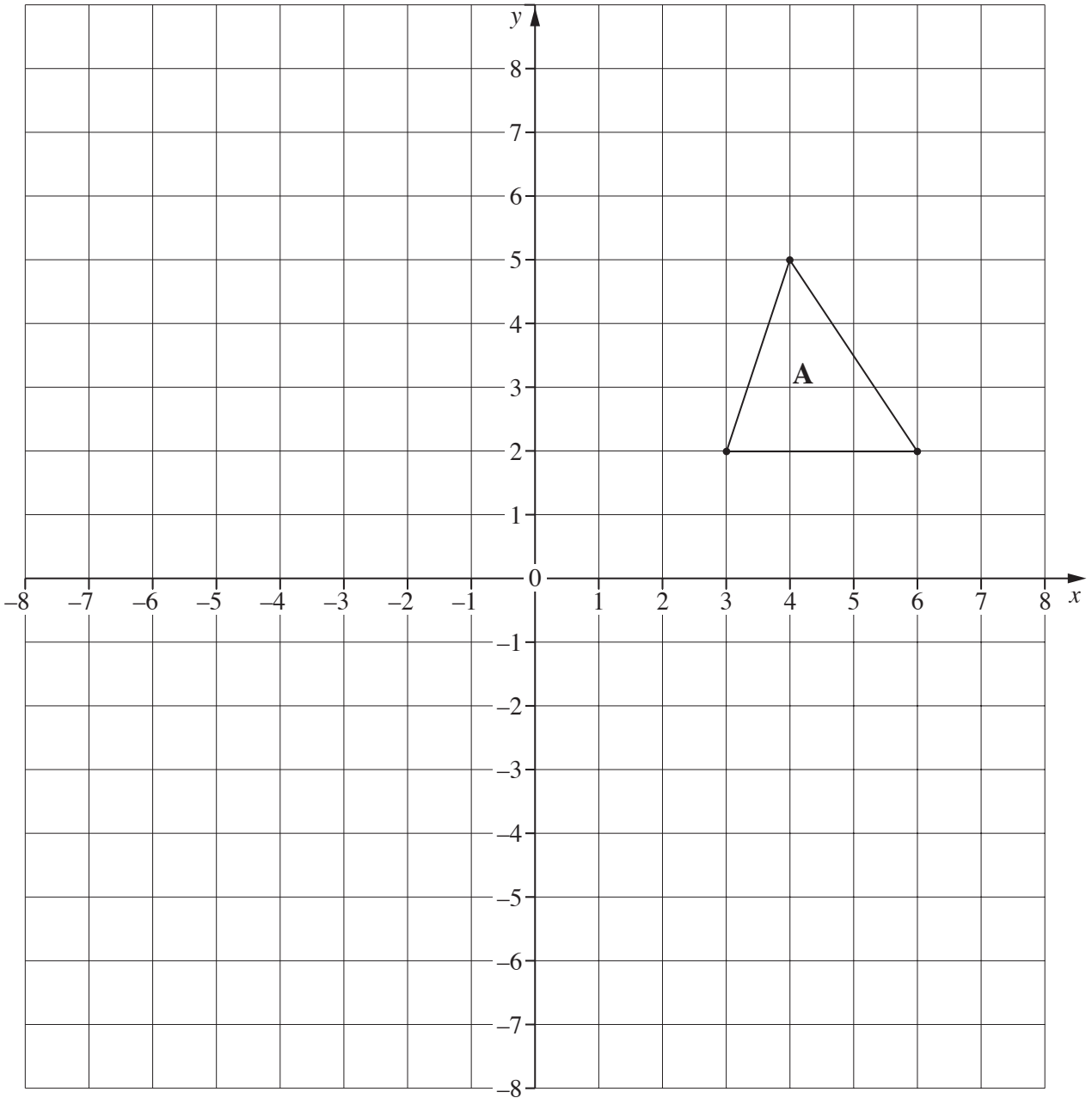
13 Rewrite $5 - x = 3 + y$ to make x the subject.

Write the answer in its simplest form.

Answer x = _____ [2]

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14



(a) Rotate triangle **A** 90º clockwise about (0, 2). Label the new triangle **B**. [2]

(b) Draw the image of **A** under a translation of $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$.
Label the new triangle **C**. [2]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

15 **(a)** Estimate the answer to $\dfrac{4.7 \times 20.1}{5.6 - 1.8}$

Answer _____ [2]

(b) Find the reciprocal of 2.2

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
January 2011

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

FRIDAY 14 JANUARY

9.15 am – 10.15 am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS JANUARY 2011

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				AVAILABLE MARKS
1	**(a)**	Triangular prism	A1	
	(b)	Cone	A1	
	(c)	Sphere	A1	
	(d)	Cylinder	A1	
	(e)	Suitable example e.g. shoebox, matchbox, cereal box	A1	5
2	**(a)**	$30 \times 15 = 450$ or $30 \times 10 = 300$	MA1 A1	
	(b)	$20p \times 100 = £20$	MA1 A1	
	(c)	$20 \div 3 = 6$	MA1 A1	6
3		Evens Unlikely Certain Impossible	MA1 MA1 MA1 MA1	4
4	**(a)**	**(i)** $3 \times 80 + 10 = 250$	M1 A1	
		(ii) Suitable reason e.g. faulty wheels, spare wheels	A1	
	(b)	$B = 3 \times 3.5$ $= 10.5$	MA1	4
5	**(a)**	**(i)** feet	A1	
		(ii) pints	A1	
	(b)	2.2×6 $= 13.2$	M1 A1	4
6	**(a)**	Yes; $7^2 = 49$ and $8^2 = 64$	A1	
	(b)	**(i)** 22	A1	
		(ii) 6	A1	
		(iii) 0	A1	4

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			AVAILABLE MARKS
7	Rectangle or Rhombus	A1	
	0 2	A1 A1	3
8	**(a)**		

SPINNER \ DICE	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10

MA2

(b) $\frac{14}{24}$ Allow MA1 for sight of 14. MA2 4

9 **(a)** $6 = 3 \times \underline{3}$, $8 = \underline{3} + \underline{5}$ A1

(b) $10 = 5 + 5$ or $3 + 7$ A1 A1

(c) **(i)** $6 = 2 + 2 + 2$

(ii) $7 = 2 + 2 + 3$ or any appropriate examples A1 4

10 **(a)** C MA1

(b) B MA1

(c) 5 km in 30 min $\rightarrow$ 10 km/h M1 A1 4

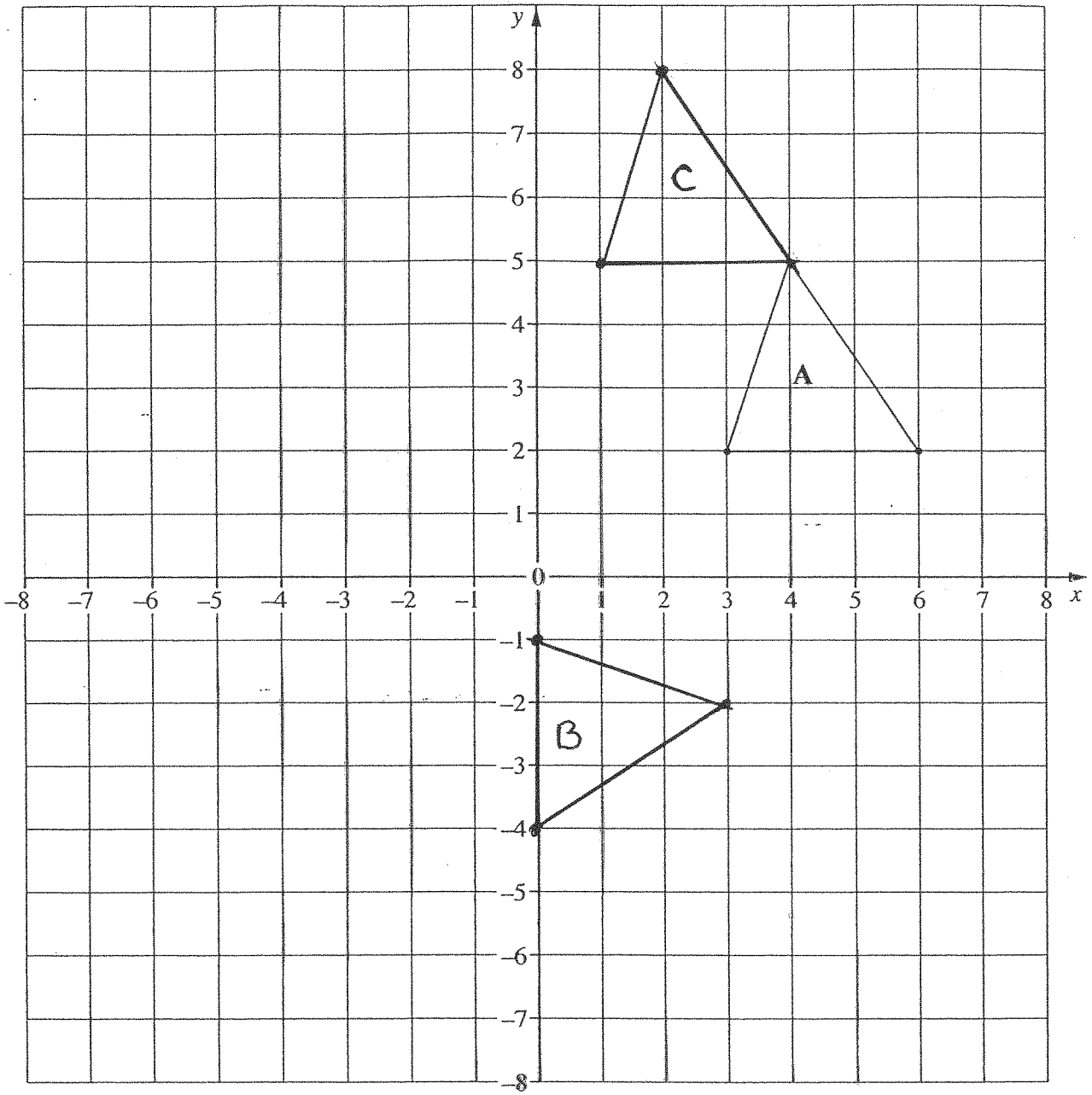
11 $c + d = 180°$ MA1
$c + a + b = 180°$ MA1
$d = a + b$ MA1 3

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			AVAILABLE MARKS
12	$\frac{60}{480}$ or $\frac{1}{8}$	MA1	1
13	$5-3-y=x$ $2-y=x$	MA1 A1	2
14	**(a)** Correct rotation	M1 A1 } Overlays to be provided	4
	(b) Correct translation	A1 A1 }	
15	**(a)** $\frac{5\times 20}{6-2}=25$	MA1 A1	
	(b) $2.2=\frac{11}{5}$ or $\frac{22}{10}$	MA1	
	$\frac{5}{11}$ or $\frac{10}{22}$	A1	4
		Total	**56**

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GCSE MATHEMATICS JANUARY 2011
MODULE N5-1
OVERLAY QUESTION 14



Rewarding Learning

Centre Number

7	1			

Candidate Number

General Certificate of Secondary Education
2010

Mathematics



Module N5 Paper 1
(Non-calculator)
Foundation Tier

GMN51

[GMN51]

MONDAY 7 JUNE

1.30 pm – 2.30 pm

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

Examiner Number

TIME

1 hour.

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.
Complete in blue or black ink. Pencil may be used in diagrams only.
Do not write with a gel pen.
Do not use correction fluid to correct errors in your answers.
Answer **all fifteen** 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.

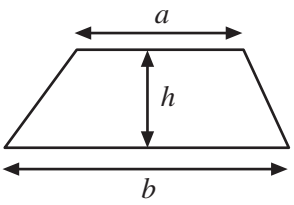
INFORMATION FOR CANDIDATES

The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

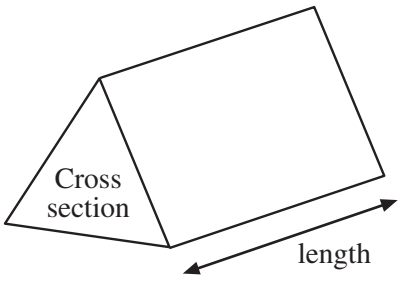
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Formula Sheet

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



5568

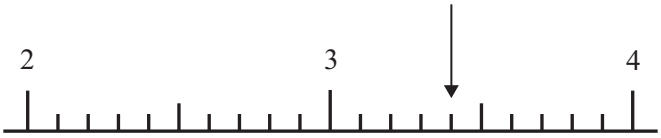
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Question 1

Examiner Only

Marks	Remark

(a) What is the scale reading shown by the arrow?



Answer _____ [1]

(b) On the diagram, show with an arrow, a reading of 32.35

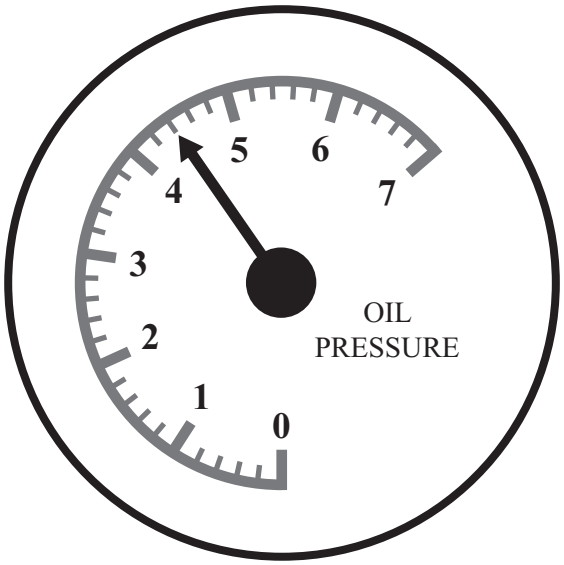


[1]

Question 1 continued

Examiner Only	
Marks	Remark

(c) The dial shows an oil pressure reading.



(i) What is the oil pressure?

Answer _____ [1]

(ii) The oil pressure drops by 1.8 units. On the dial above, show the new reading by drawing an arrow. [1]

Question 2

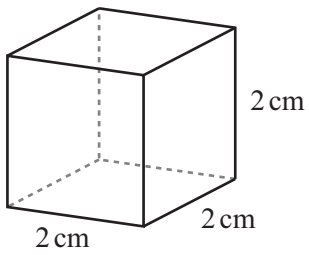
Examiner Only	
Marks	Remark

(a) Draw a sketch of a square-based pyramid in the space below.

[1]

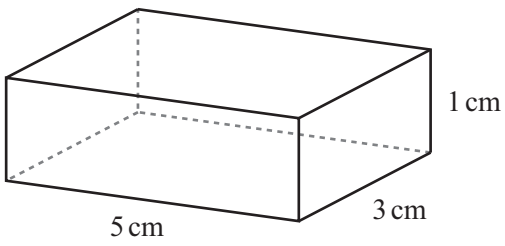
(b) Give the names for the shapes drawn below.

(i)



Answer _____ [1]

(ii)



Answer _____ [1]

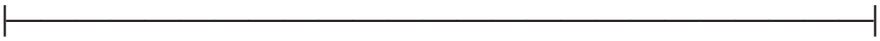
[Turn over

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Question 3

Examiner Only	
Marks	Remark

Probability line



Impossible **Unlikely** **Even chance** **Likely** **Certain**

Choose the best word or words from the probability line to describe the chance of each of these events taking place.

Choosing at random, a day of the week

(a) containing the letter Y,

Answer _____ [1]

(b) beginning with a W,

Answer _____ [1]

(c) beginning with a T or an S,

Answer _____ [1]

(d) having less than six letters.

Answer _____ [1]

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Question 4

Examiner Only	
Marks	Remark

(a) (i) Estimate $19.1 \div 3.9$

Answer _____ [1]

(ii) Estimate 298×4.12
Show your working.

Answer _____ [2]

(b) Estimate how many shirts costing £8.65 each could be bought for £70

Answer _____ [2]

(c) Phil works from 9 am to 12 am on Mondays and Tuesdays.
She works from 4 pm to 9 pm on Wednesdays and Fridays.
She earns £7.00 per hour.
How much does she earn per week?

Answer £ _____ [3]

Question 4 continued

Examiner Only	
Marks	Remark

(d) Calculate

(i) $-4 + 12$

Answer _____ [1]

(ii) $-4 - 3$

Answer _____ [1]

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Question 5

Examiner Only

Marks	Remark

Name a three-sided shape which has rotational symmetry of order 3

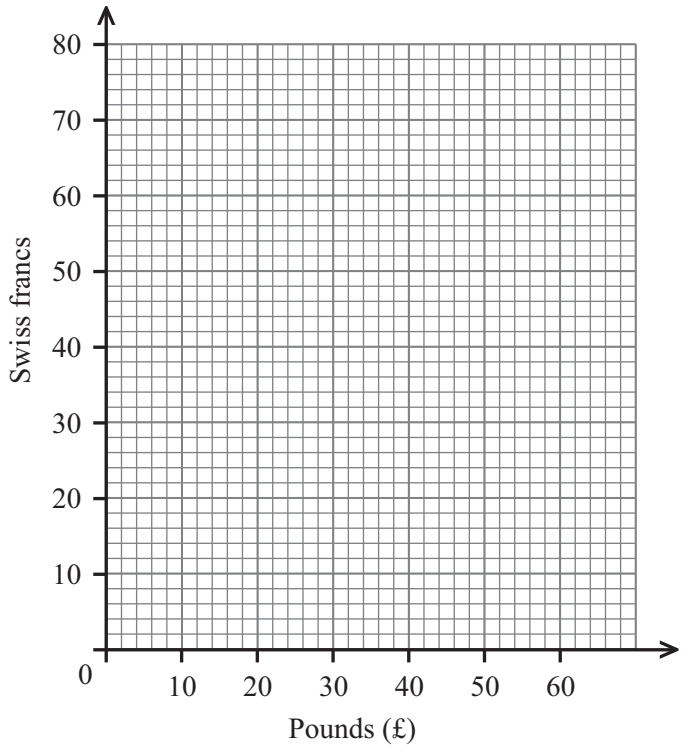
Answer _____ [1]

Question 6

Examiner Only	
Marks	Remark

Pounds (£)	5	20	35	50
Swiss francs	8	32	56	80

(a) Plot the points and draw the conversion graph on the grid below.



[3]

(b) Use your graph to convert:

(i) £28 to Swiss francs.

Answer _____ Swiss francs [1]

(ii) 66 Swiss francs to Pounds (£).

Answer £ _____ [1]

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Question 7

Examiner Only	
Marks	Remark

Convert

(a) 5 kg to pounds given that 1 kg = 2.2 pounds.

Answer _____ pounds [1]

(b) 100 litres to pints given that 4 litres = 7 pints.

Answer _____ pints [2]

(c) 60 mph into km/h.

Answer _____ km/h [2]

Question 8

Examiner Only	
Marks	Remark

(a) Calculate

(i) $14 - 6 \div 2$

Answer _____ [1]

(ii) $15 - 2(4 + 1)$

Answer _____ [1]

(b) Insert symbols from +, –, × **or** ÷ into the boxes in order to make this calculation correct.

$12 \square 4 \square 2 = 4$ [1]

(c) Insert a pair of brackets into this calculation to make it correct.

$5 \times 6 - 2 + 2 = 22$ [1]

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Question 9

Examiner Only	
Marks	Remark

A rectangle has a length of 2.5 cm and a breadth of 6 cm.
This rectangle is now enlarged by a scale factor of four.
Write down the sizes of its new length and breadth.

Answer New length = _____ cm, New breadth = _____ cm [2]

Question 10

Examiner Only	
Marks	Remark

Raymond claims "the sum of three consecutive integers is always odd".
Is he correct? Give a reason for your answer.

Answer _____ because _____

_____ [2]



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Question 11

Examiner Only	
Marks	Remark

A new box of pencils has 30 pencils in it.
Three of the pencils have broken leads.

(a) (i) I choose a pencil at random from this box.
What is the probability that it does **not** have a broken lead?

Answer _____ [2]

The first pencil I choose has a broken lead and I don't replace it in the box.

(ii) What is the probability that the next pencil I choose **will** have a broken lead?

Answer _____ [1]

(b) The company that makes the pencils claims that 99% of them are always sharpened and ready to use.
Would you agree?
Explain your answer.

Answer _____ because _____

_____ [1]

Question 12

Examiner Only	
Marks	Remark

$$R = \frac{S(2 + T)}{6}$$

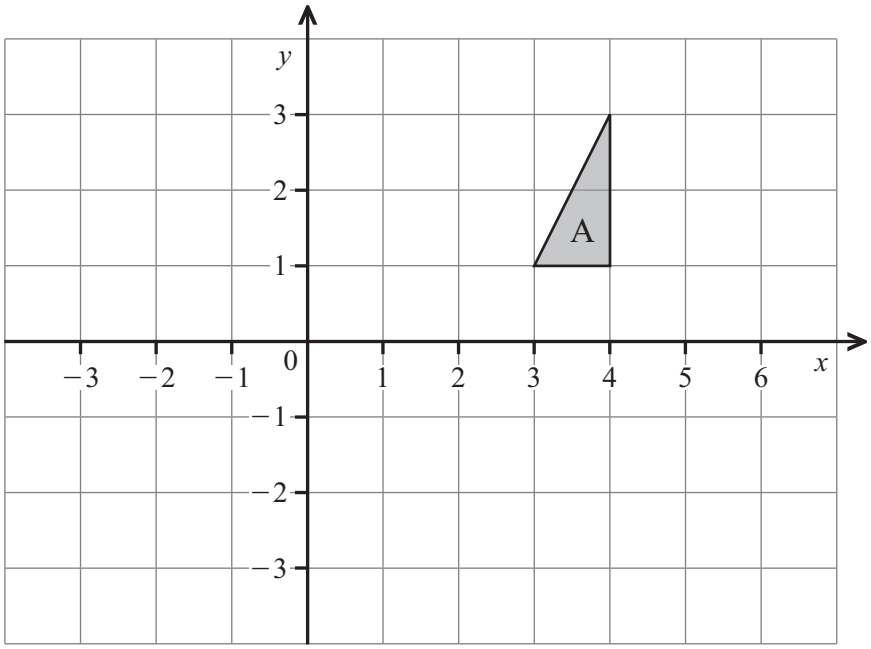
Calculate the value of R when $S = 15$ and $T = -10$

Answer $R =$ _____ [3]

Question 13

Examiner Only	
Marks	Remark

(a) Reflect triangle A in the line $x = 2$
Label your triangle, B.



[2]

(b) Draw the image of triangle A after a rotation of 90° clockwise about the point $(3, 0)$. Label your triangle, C. [2]

Question 14

Examiner Only	
Marks	Remark

(a) Given that $\frac{3024}{36} = 84$, write down the answer to 360×84

Answer _____ [1]

(b) Decide whether the following statements are true or false.
In each case, give an example to support your answer.

(i) Negative numbers have no reciprocals.

Answer _____ because _____ [1]

(ii) The product of a number with its own reciprocal is 1

Answer _____ because _____ [1]

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Question 15

Examiner Only	
Marks	Remark

John has two green and five blue marbles in a bag.
How many blue marbles must be added to the bag to make the probability of choosing a blue marble at random from the bag equal to $\frac{4}{5}$?

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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GCSE

Mathematics (Modular)

Summer 2010

Mark Schemes

Issued: October 2010

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Rewarding Learning

General Certificate of Secondary Education
2010

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

MONDAY 7 JUNE

1.30 pm – 2.30 pm

MARK SCHEME

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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:

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:

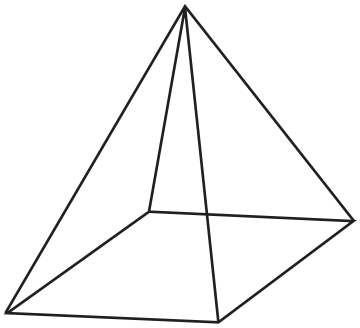
It is our intention to reward candidates for any demonstration of relevant knowledge, skills or understanding. For this reason we adopt a policy of **following through** their answers, that is, having penalised a candidate for an error, we mark the succeeding parts of the question using the candidate's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

			AVAILABLE MARKS
1	**(a)** 3.4	A1	
	(b) Arrow correctly drawn at 32.35	A1	
	(c) **(i)** 4.4	A1	
	(ii) Arrow correctly drawn at 2.6	MA1	4
2	**(a)** 	A1	
	(b) **(i)** cube	A1	
	(ii) cuboid	A1	3
3	**(a)** certain	A1	
	(b) unlikely	A1	
	(c) likely	A1	
	(d) impossible	A1	4
4	**(a)** **(i)** 5	A1	
	(ii) 300×4	MA1	
	$= 1200$	A1	
	(b) $70 \div 9 \triangleq 8$	M1, A1	
	(c) $2 \times 3 + 2 \times 5 = 16$	M1, A1	
	$16 \times £7.00 = £112$	MA1	
	(d) **(i)** 8	A1	
	(ii) -7	A1	10

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			AVAILABLE MARKS
5	Equilateral triangle	A1	1
6	**(a)** correct points, line	A2, A1	
	(b) **(i)** 45 ± 1	A1	
	(ii) 41 ± 1	A1	5
7	**(a)** 5×2.2		
	$= 11$	MA1	
	(b) $\frac{100}{4} \times 7$	MA1	
	$= 175$	A1	
	(c) $60 \times \frac{8}{5}$	MA1	
	$= 96$	A1	5
8	**(a)** **(i)** 11	A1	
	(ii) 5	A1	
	(b) $-$ and $\times$	A1	
	(c) $5 \times (6 - 2) + 2$	A1	4
9	10	A1	
	24	A1	2
10	No, with example provided e.g. $1 + 2 + 3 = 6$ which is even	M1, A1	2
11	**(a)** **(i)** 27/30	M1, A1	
	(ii) 2/29	A1	
	(b) No, 27/30 is 90%	A1	4

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			AVAILABLE MARKS
12	$\frac{15(2-10)}{6}$	MA1	
	$\frac{-120}{6}$	MA1	
	-20	A1	3
13	**(a)** Correct line	M1	
	Three points correct	A1	
	(b) Correct rotation	M1	
	Three points correct	A1	4
14	**(a)** 30240	A1	
	(b) False with a given example	A1	
	True with a given example	A1	3
15	$2 + 6 \longrightarrow \frac{6}{8}$		
	$2 + 7 \longrightarrow \frac{7}{9}$		
	$2 + 8 \longrightarrow \frac{8}{10} = \frac{4}{5}$	M1	
	Answer 3	A1	2
		Total	**56**

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2010

Mathematics



Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

GMN51

FRIDAY 15 JANUARY

9.15 am – 10.15 am

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
Total Marks	

TIME

1 hour.

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 eighteen** 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.

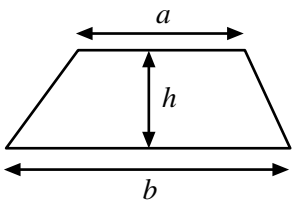
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The Formula Sheet is on page 2.

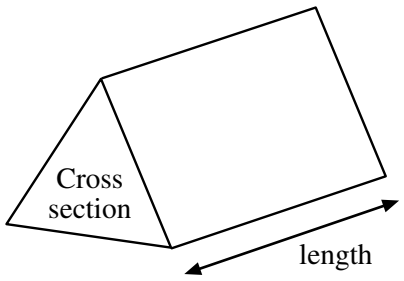
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Formula Sheet

Area of trapezium = $\frac{1}{2}(a + b)h$

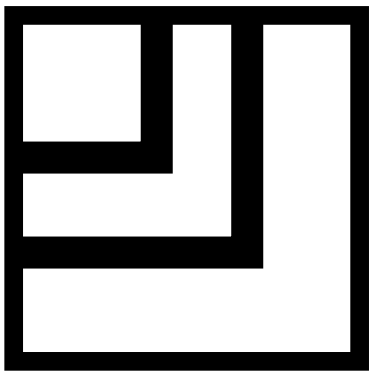


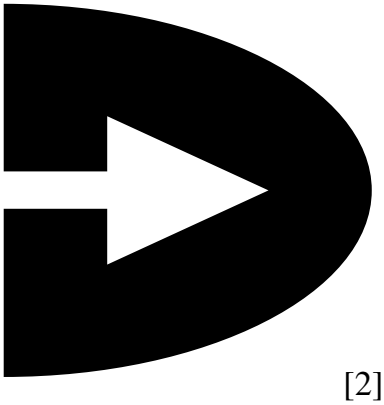
Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

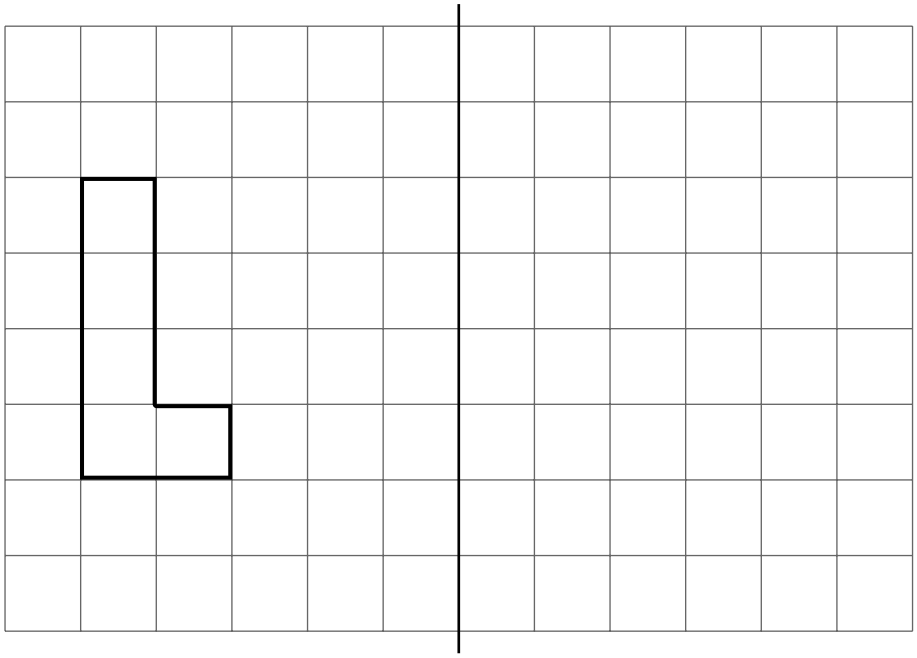
1 **(a)** Draw a line of symmetry on each shape below.





[2]

(b)



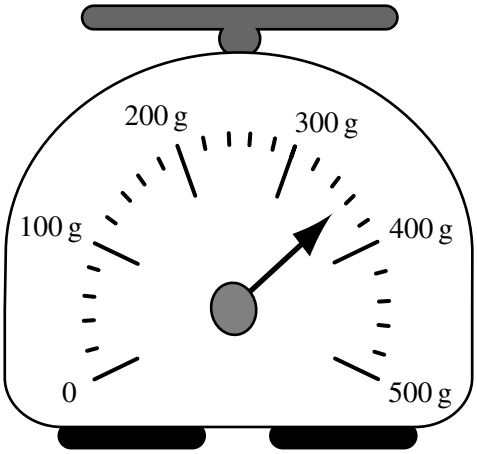
mirror line

Draw the reflection in the mirror line of the given shape. [2]

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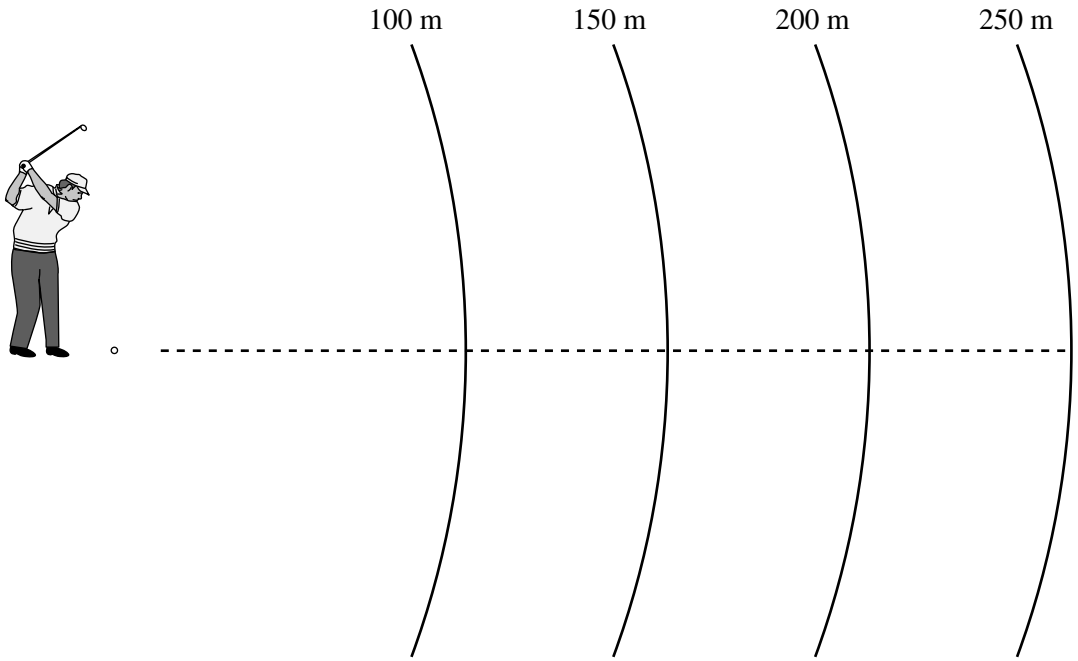
Examiner Only	
Marks	Remark

2 **(a)** Write down the weight shown on the scale.



Answer _____ g [1]

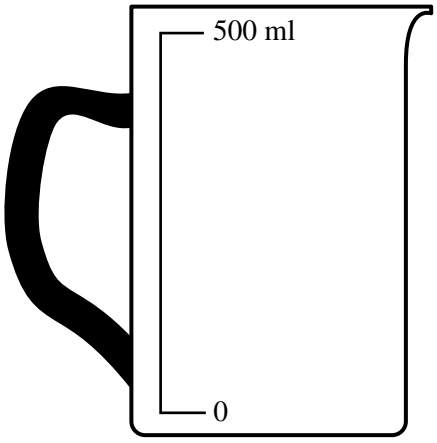
(b) At a golf driving range, Donald hits the ball 225 m. Mark along the central line an X to show where the ball landed.



[1]

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(c) Create an **accurate** scale on this measuring jug and mark a water level at 280 ml.



[2]

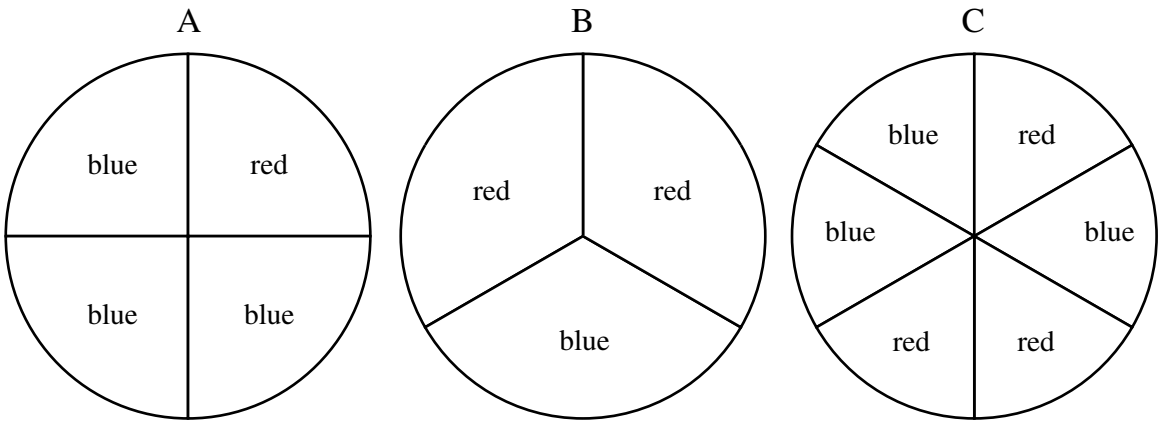
Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

3 Below are three spinners used in a board game.



(a) Which spinner is most likely to land on red?

Answer _____ [1]

(b) Explain why there is an even chance of spinner C landing on red.

Answer _____ [1]

4

A hotel provides food at a conference for £7.95 per head. There are 153 people at the conference.
Estimate the total cost of the food.
Show your working.

Answer £_____ [2]

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Examiner Only	
Marks	Remark

5 In a quiz, there are twenty questions.

Each correct answer gains six points and each wrong answer loses two points.

(a) If a contestant in the quiz answers all twenty questions, explain how they could score 96 points altogether.

[2]

(b) Explain how they could score 0 points altogether.

[2]

---

6 In the following sentences, fill in the correct **metric** units which can be used in place of the given imperial units.

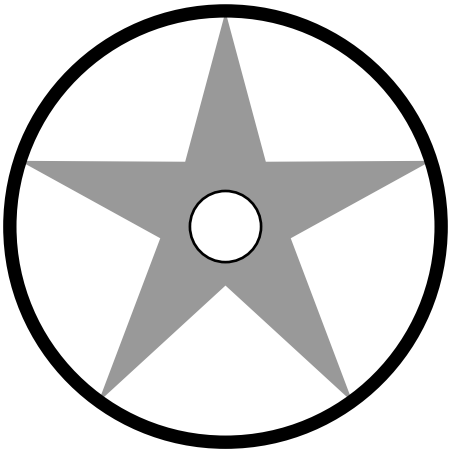
(a) Butter can be bought in **pounds** or _____ [1]

(b) Milk can be bought in **pints** or _____ [1]

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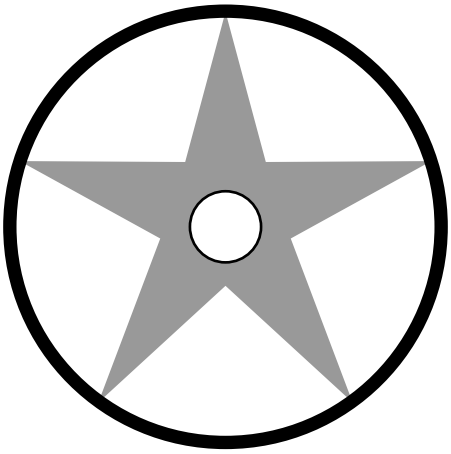
Examiner Only	
Marks	Remark

7 **(a)** Mark the centre of rotational symmetry on the shape below.



[1]

(b) Draw **all** the axes of symmetry on the shape below.



[2]

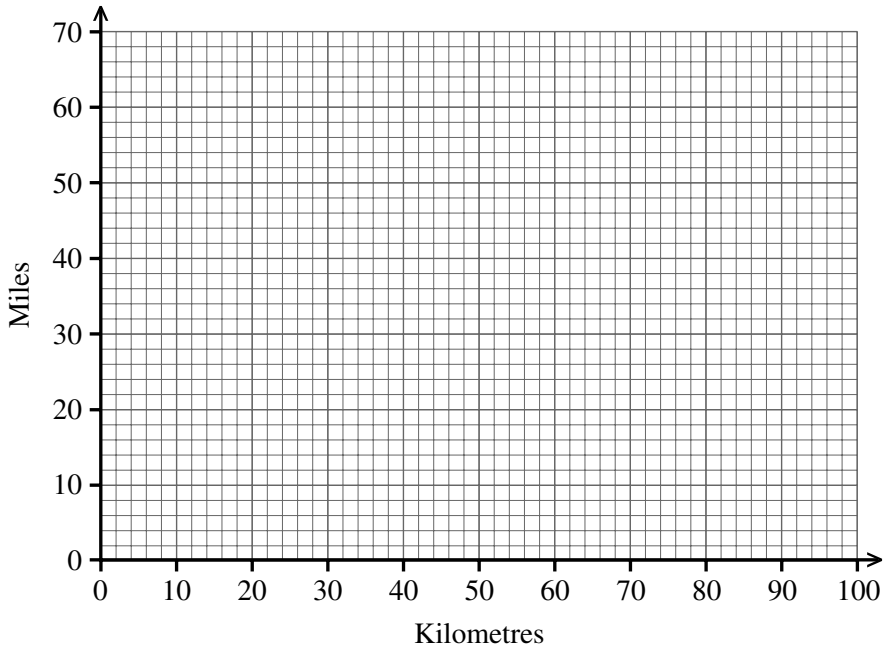
(c) The distance round the edge of a wheel of this shape is about 12 feet.
About how many metres is that?

Answer _____ m [2]

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8 **(a)** Use the values in the table to draw the conversion graph from kilometres to miles on the grid below.

Kilometres	20	30	40	50	60	70	80
Miles	12.4	18.6	24.9	31.1	37.3	43.5	49.7



[3]

(b) Use your graph to convert 35 miles into kilometres.

Answer _____ km [1]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

9 **(a)** Calculate

(i) $15 - (2 - 7)$

Answer _____ [1]

(ii) $24 - 12 \div 4$

Answer _____ [1]

(b) Insert brackets in order to make the following calculation correct.

$$14 \quad - \quad 4 \quad \times \quad 3 \quad - \quad 2 \quad = \quad 10$$

[1]

(c) Estimate to the nearest integer, $\sqrt{84}$

Answer _____ [1]

(d) A credit card bill requires a payment of 10% of £186 or £5 whichever is the greater. How much must be paid?

Answer £ _____ [3]

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10 **(a)** 800 tickets are sold for a raffle. First prize is a holiday.

(i) I buy one ticket for the raffle. What is the probability I win the holiday?

Answer _____ [1]

(ii) Explain why the probability that a female wins the holiday may not be $\frac{1}{2}$

Answer _____

_____ [1]

(b) The probability that a student writes left-handed is 0.12
What is the probability that a student writes right-handed?

Answer _____ [1]

Examiner Only	
Marks	Remark

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11

Belfast, Europa Buscentre - Armagh													Goldline Express Service 251
Monday to Friday													
Service		271									270		
Notes			A	A		A	A	A	F	A		A	
Notes									NJA				
Belfast, Europa Buscentre	0800	0910	1000	1100		1200	1300	1400	1400	1500	1545	1600	1645
Loughview Park and Ride	0825	0935	|	|		|	|	|	|	|	1610	|	|
Moria, McClellands Shop	|	|	1025	1125		1225	1325	1425	|	1525	|	1625	|
Moria, Village Gatestop	|	|	1027	1127		1227	1327	1427	|	1527	|	1627	|
Maralin	|	|	1030	1130		1230	1330	1430	|	1530	|	1630	|
Dollingstown	|	|	1035	1135		1235	1335	1435	|	1535	|	1635	|
Lurgan, Queen Street	|	|	1038	1138		1238	1338	1438	|	1538	|	1638	|
Lurgan, Market Street	0835	0945	1040	1140		1240	1340	1440	|	1540	1625	1640	|
Craigavon, Rushmere Centre	0900	|	1050	1150		1250	1350	1450	|	1550	|	1650	|
Portadown, Market Street	0915	1000	1100	1200		1300	1400	1500	|	1600	1645	1700	1730
Richhill Square	|	|	1118	1218		1318	1418	1518		1618	|	1718	|
Armagh Buscentre, Lonsdale Rd	0935	1020	1130	1230		1330	1430	1530	1500	1630	1705	1730	1750
Armagh Buscentre, Lonsdale Rd		1025			1230				|		|		1805
Monaghan, Library		|			1315			|		|		1805
Monaghan, Bus Station		1055			1325				1530		1735		1855

A – Ordinary service between Portadown and Armagh F – Fridays Only NJA – Does not operate during July and August

Source: Translink

Examiner Only	
Marks	Remark

(a) Jason takes the 1545 bus from Belfast to Armagh. How long should the journey take?

Answer _____ [1]

(b) Rebekah is in Belfast. She has to be in Armagh by 2.45 pm. What is the latest bus she could take from the Europa Buscentre?

Answer _____ [1]

(c) Colin travelled from the Europa Buscentre to the Armagh Buscentre in exactly one hour using this bus service. What day of the week must he have travelled on?

Answer _____ [1]

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Examiner Only	
Marks	Remark

12 Rearrange $2p - 3 = 6 - q$ to make q the subject.

Answer $q =$ _____ [2]

---

13 **(a)** Jack states that 'Any number cubed is always an even number'.
Give a counter example for this statement.

[2]

(b) Jill takes 120 steps to cover 72 metres.
What distance will she cover in taking 90 similar sized steps?

Answer _____ m [2]

---

14 A recipe for two medium glasses of Apple and blackcurrant Smoothie uses

250 ml	Apple and blackcurrant juice
2 tablespoons	Natural yoghurt
180 ml	Milk
3 scoops	Vanilla ice cream

Complete the recipe for five medium glasses.

Answer

_____ ml	Apple and blackcurrant juice
5 tablespoons	Natural yoghurt
_____ ml	Milk
_____ scoops	Vanilla ice cream

[2]

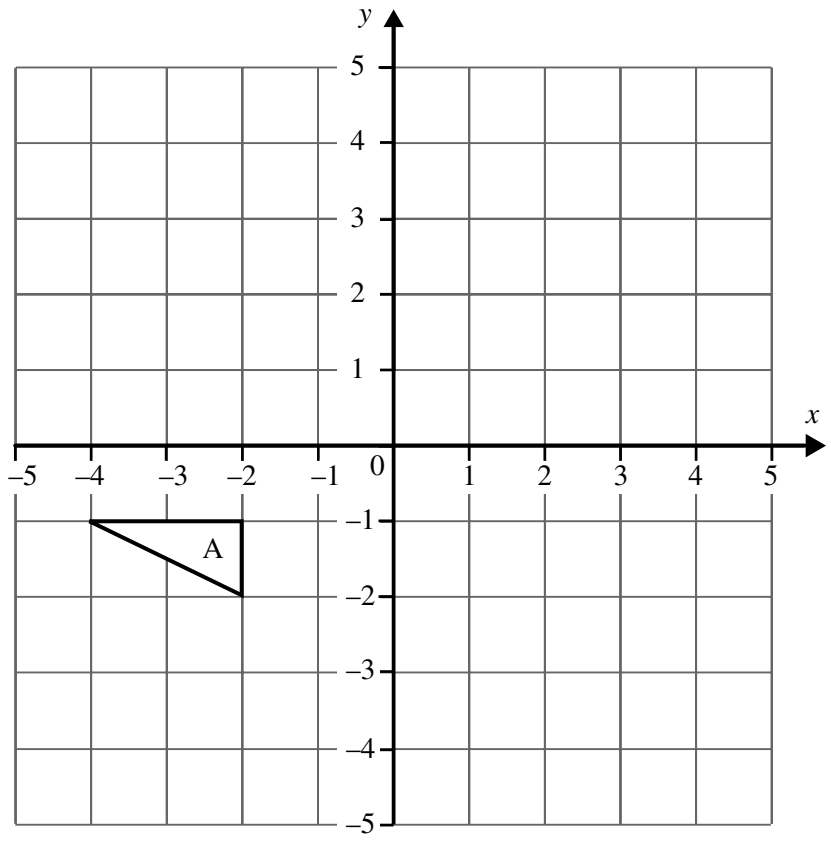
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Examiner Only	
Marks	Remark

15 In a fairground game of chance, 120 people buy one ticket each.
The cost of a ticket is 50p.
The probability that a person wins a prize is $\frac{1}{12}$
Each winning ticket gets a prize of £1.50
What profit is made from the game?

Answer £ _____ [2]

16

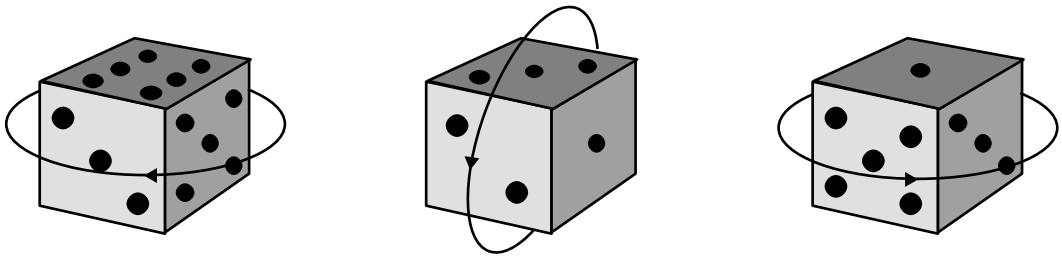


Draw the image of triangle A after a translation $\begin{pmatrix} 6 \\ -2 \end{pmatrix}$ [2]

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Examiner Only	
Marks	Remark

17 Opposite faces of a dice add up to give seven.
As shown, the total of the numbers on the front faces is 3 + 2 + 5 = 10
In one move, **each** dice below is rotated in the direction shown one face at a time (a quarter turn).
After two moves, what will be the total of the numbers on the **front** faces?
Show your working.



Answer **Total** = _____ [2]

18 In a survey of 200 cars crossing a bridge, 45 had no passengers.
On a day when 4000 cars cross the bridge, how many cars would you expect to have no passengers?

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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1312-046-1

GCSE

Mathematics (Modular)

January 2010

Mark Schemes

Issued: April 2010

General Certificate of Secondary Education
January 2010

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

FRIDAY 15 JANUARY

9.15am – 10.15am

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:

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).

				AVAILABLE MARKS
1	**(a)**	Correct lines	A1, A1	
	(b)	Correct reflection	A2	4
2	**(a)**	360	A1	
	(b)	X marked correctly	A1	
	(c)	Correct scale (1 cm = 100 ml) Water level marked at 280 ml	MA1 MA1	4
3	**(a)**	B	A1	
	(b)	It has an equal number of red and blue sectors	A1	2
4		8 × 150	MA1	
		= 1200	A1	2
5	**(a)**	17 correct answers and/or 3 wrong answers	MA2	
	(b)	5 correct and/or 15 wrong	MA2	4
6	**(a)**	kilograms **or** grams	A1	
	(b)	litres **or** millilitres	A1	2
7	**(a)**	Centre marked correctly	A1	
	(b)	5 correct lines	A2	
	(c)	12 ÷ 3 **or** 3 feet = 1 metre 4 (accept 3.6)	MA1 A1	5
8	**(a)**	All points plotted correctly Straight line graph drawn	A2 A1	
	(b)	56 km	A1	4

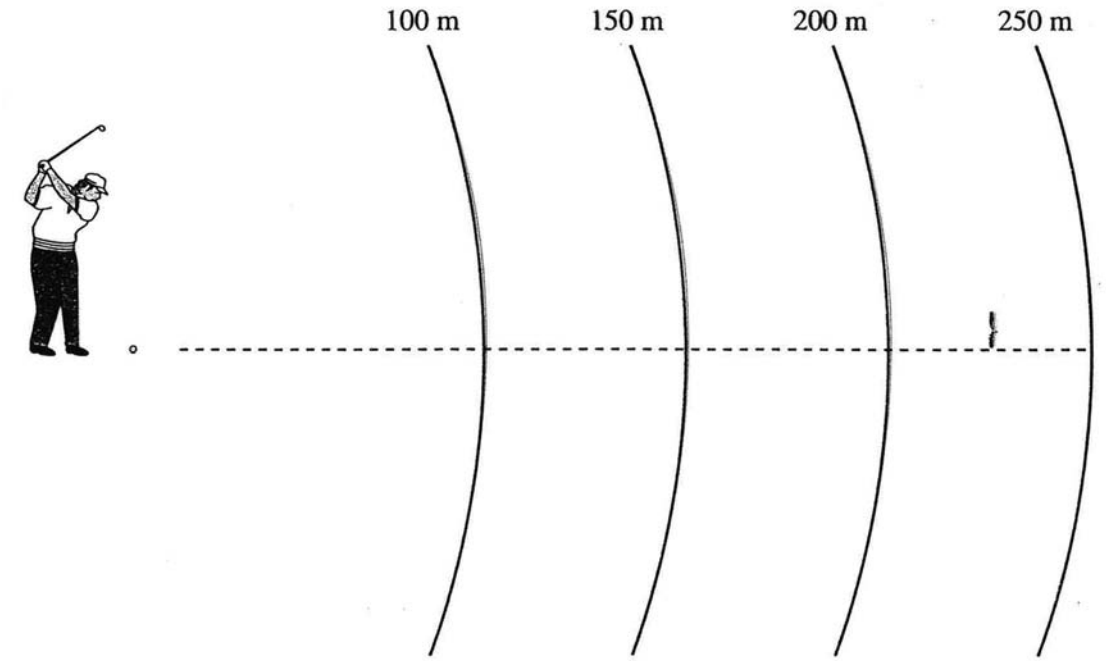
				AVAILABLE MARKS
9	**(a)**	**(i)** $15 - (-5)$		
		$= 20$	MA1	
		(ii) $24 - 3$		
		$= 21$	MA1	
	(b)	$14 - 4 \times (3 - 2)$ **or** $(14 - 4) \times (3 - 2)$	A1	
	(c)	9	A1	
	(d)	10% = £18.60	M1, A1	
		18.60	A1	7
10	**(a)**	**(i)** $\frac{1}{800}$	A1	
		(ii) May not have been an equal number of tickets bought by males/females	A1	
	(b)	0.88	A1	3
11	**(a)**	1 hr 20 mins **or** 80 mins	A1	
	(b)	1300	A1	
	(c)	Friday	A1	3
12		$2p - 3 - 6 = -q$ **or** $2p - 9 = -q$	MA1	
		$3 + 6 - 2p = q$ **or** $9 - 2p = q$	MA1	2
13	**(a)**	e.g. $3^3 = 27$ (which is odd)	A2	
	(b)	$\frac{90}{120} = \frac{3}{4}$	A1	
		$\frac{3}{4} \times 72 = 54$	MA1	4

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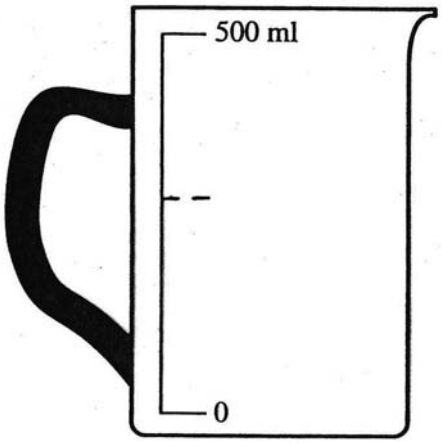
			AVAILABLE MARKS
14	625 ml		
	450 ml		
	7.5 scoops	MA2 (MA1 for any 1 correct)	2
15	$\frac{1}{12} \times 120 = 10$ people $\times$ £1.50 = £15	MA1	
	$60 - 15 = 45$	MA1	2
16	Correct translation 6 right	A1	
	Correct translation 2 down	A1	2
17	$4 + 5 + 2$	MA1	
	$= 11$	A1	2
18	$\frac{45}{200} \times 4000$	MA1	
	$= 900$	A1	2
		Total	**56**

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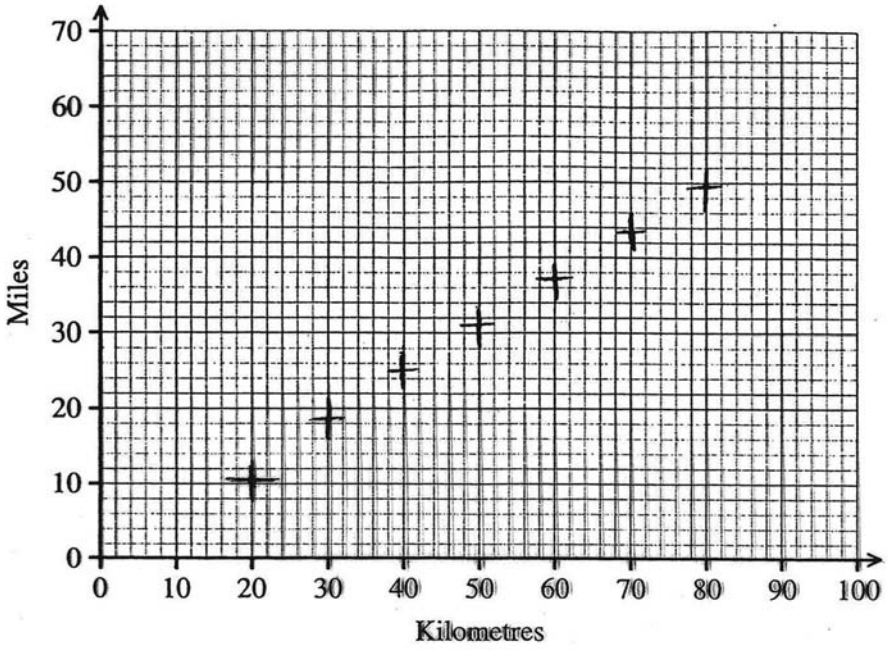
GCSE MATHEMATICS JANUARY 2010
MODULE N5-1
OVERLAY QUESTION 2(b)



GCSE MATHEMATICS JANUARY 2010
MODULE N5-1
OVERLAY QUESTION 2(c)



GCSE MATHEMATICS JANUARY 2010
MODULE N5-1
OVERLAY QUESTION 8



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
2009

Mathematics



Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

MONDAY 1 JUNE

9.15 am – 10.15 am

GMN51

TIME

1 hour.

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 fifteen** 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

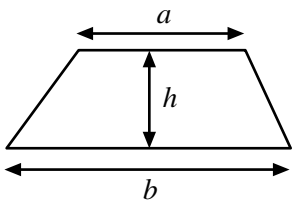
The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

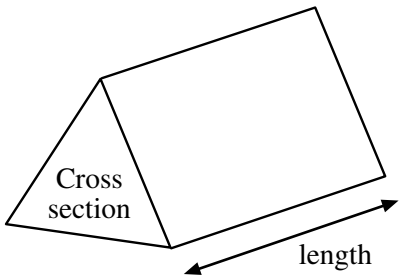
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Formula Sheet

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length

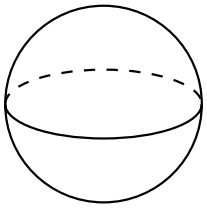


1 Choose from

cylinder cone triangular prism pyramid
sphere cuboid cube

to complete the sentences.

(a)



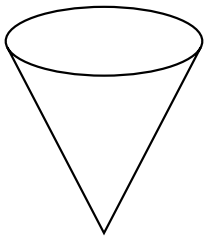
The ball is a _____. [1]

(b)



The pipe is a _____. [1]

(c)



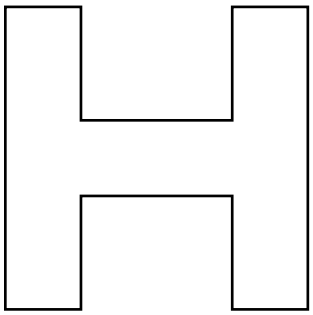
The funnel is a _____. [1]

Examiner Only

Marks	Remark

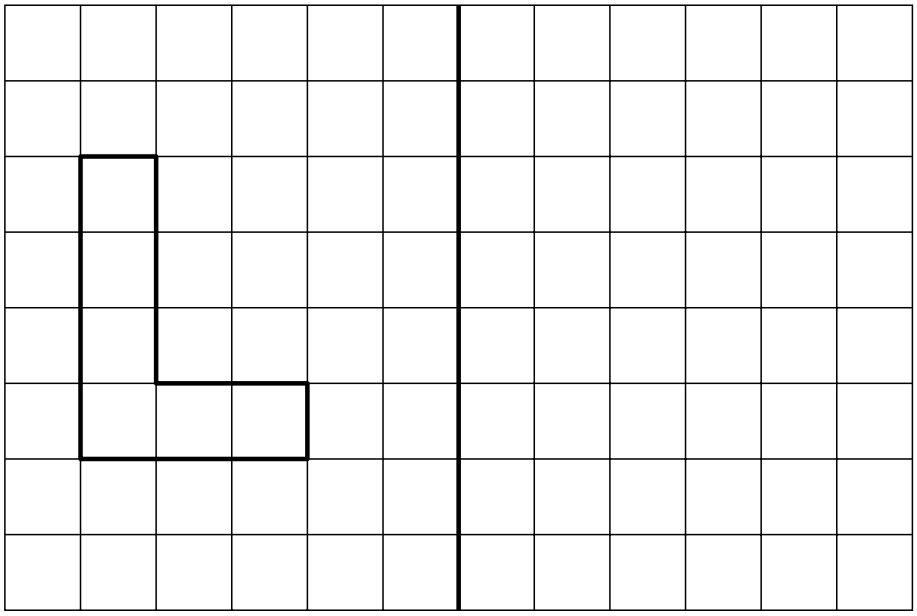
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2 **(a)** Draw 2 lines of symmetry on the letter H below.



[2]

(b) Draw the reflection of the letter L in the mirror line.



[2]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

3 Choose from

Impossible Certain Likely Unlikely

Very unlikely Even Very likely

to describe the probability of each of the following. Explain your answers.

(a) A baby being born is a girl.

Answer _____ because _____

_____ [1]

(b) A bus will have a puncture on the way to school.

Answer _____ because _____

_____ [1]

(c) You will eat some food this week.

Answer _____ because _____

_____ [1]

---

4 The time (in minutes), taken to cook a roast of beef is given by the formula

Time = twenty × weight in pounds + forty

Calculate the time taken (in minutes), to cook a roast weighing $4\frac{1}{2}$ pounds.

Answer _____ minutes [2]

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Examiner Only	
Marks	Remark

5 **(a)** Write

(i) 5386 correct to the nearest 10

Answer _____ [1]

(ii) 5386 correct to the nearest 100

Answer _____ [1]

(b) Estimate

(i) 106×4.873

Answer _____ [2]

(ii) how many books costing £3.86 each can be bought for £18?

Answer _____ [2]

---

6 **(a)** The time in New York is 5 hours behind the time in London.

What time is it in New York when it is 3.00 pm in London?

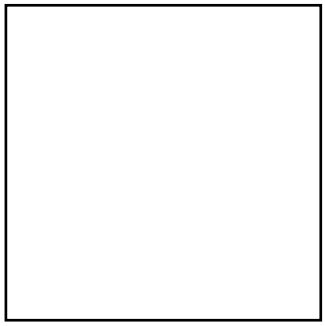
Answer _____ [1]

(b) Beijing is 11 hours ahead of London.
What time is it in Beijing when it is 5.00 am in London?

Answer _____ [1]

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7



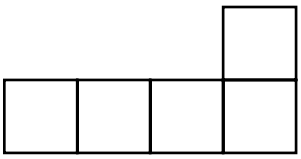
Examiner Only	
Marks	Remark

(a) Draw all the lines of symmetry on the square. [2]

(b) What is the order of rotational symmetry of the square?

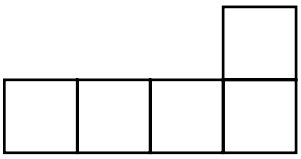
Answer _____ [1]

(c) Add a one centimetre square to complete a shape with one line of symmetry.



[1]

(d) Add a one centimetre square to complete a shape which has rotational symmetry of order 2



[1]

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Examiner Only	
Marks	Remark

8 **(a)** Calculate

(i) $8 + 6 \div 2$

Answer _____ [1]

(ii) $5 \times 4 - 3 \times 2$

Answer _____ [1]

(b) Between which two whole numbers would you expect to find the value of $\sqrt{42}$?

Answer _____ and _____ [1]

(c) Describe how to calculate 80×0.5 without using multiplication.

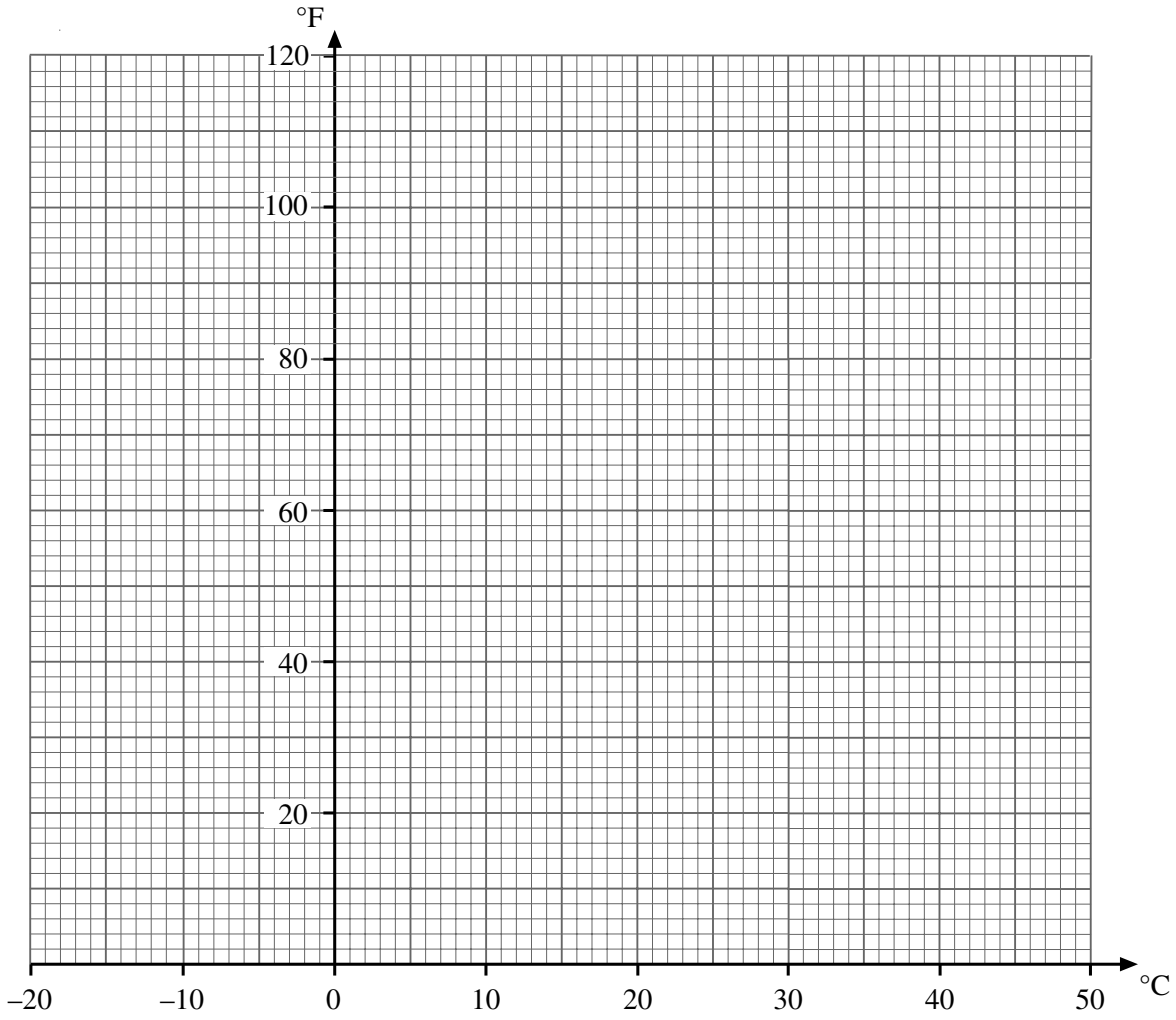
[1]

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9 The table shows temperatures in °C and their equivalent in °F.

Temperature °C	–10	0	20	40
Temperature °F	14	32	68	104

(a) Plot the points on the graph paper below and draw the conversion graph.



[3]

(b) Use the conversion graph to find

(i) the °F temperature equivalent to 30 °C,

Answer _____°F [1]

(ii) the °C temperature equivalent to 20 °F.

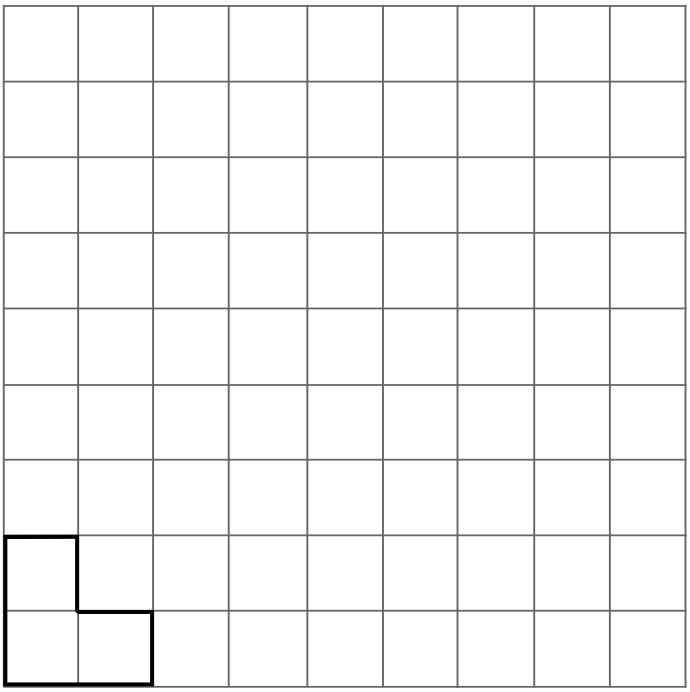
Answer _____°C [1]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

10 **(a)** Enlarge the shape by a scale factor 3 on the grid below.



[2]

(b) How many times bigger is the area of the enlarged shape than the area of the original shape?

Answer _____ [2]

---

11 Mary hears Ian say

"Every time you subtract a square number from a larger square number the answer is always an odd number."

Mary thinks that this is not always true. Write down two different square numbers to show that Mary is correct.

Answer _____ and _____ [2]

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12 A spinner can point to the colours Red, Green, Yellow, Blue or Black.
The probabilities are given in the table.

Colour	Red	Green	Yellow	Blue	Black
Probability	0.3	0.15	0.2	0.25	0.1

(a) What colour is the spinner least likely to point to?

Answer _____ [1]

(b) What colour is the spinner most likely to point to?

Answer _____ [1]

(c) If the spinner is spun 600 times, estimate how many times you would expect the colour to be Green.

Answer _____ [2]

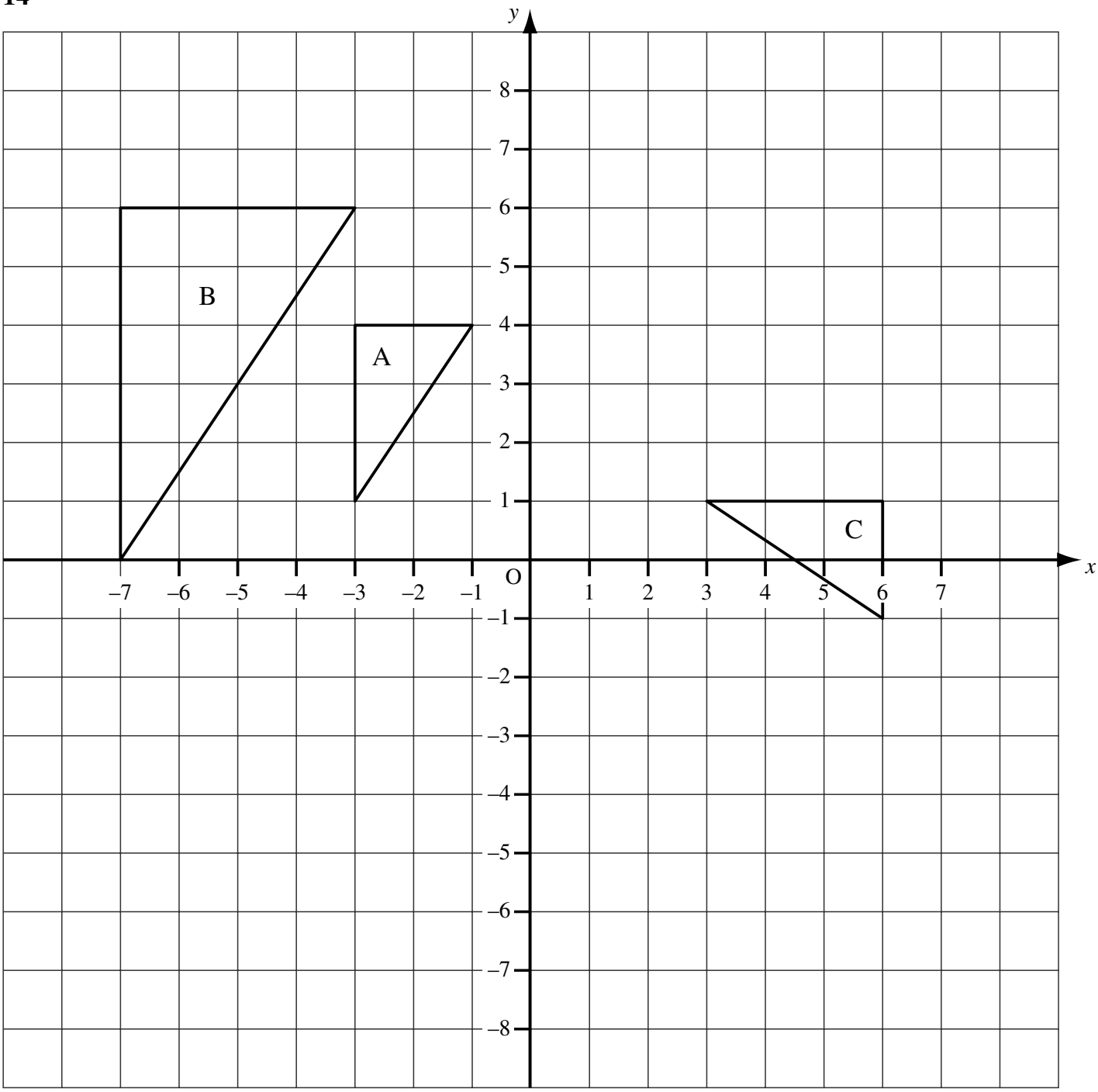
13 Prove that the square of any even number is a multiple of 4

[2]

Examiner Only
Marks | Remark

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14



Examiner Only	
Marks	Remark

(a) **(i)** Describe fully the single transformation which takes triangle A to triangle B.

Answer: _____ [3]

(ii) Describe fully the single transformation which takes triangle A to triangle C.

Answer: _____ [3]

(b) Draw the image of A under a translation $\begin{pmatrix} 1 \\ -5 \end{pmatrix}$. [2]

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15 Make g the subject of the formula $v = u + gt$.

Answer $g =$ _____ [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

Summer 2009

Mathematics

Module N5 Paper 1

(Non-calculator)

Foundation Tier

[GMN51]

MONDAY 1 JUNE

9.15 am – 10.15 am

MARK SCHEME

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GCSE MATHEMATICS 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:

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Some common examples of this occur in the following cases:

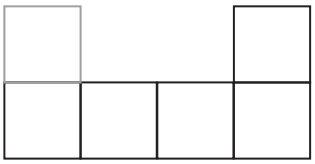
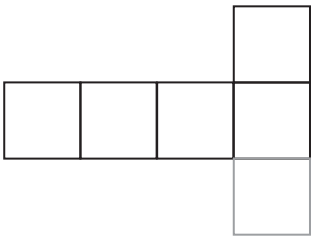
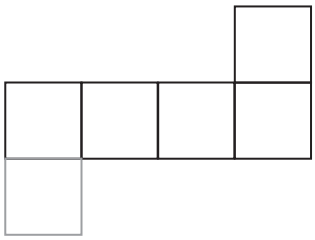
(a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;

(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)** sphere	A1	
	(b) cylinder	A1	
	(c) cone	A1	3
2	**(a)** each line	A1, A1	
	(b) correct shape and orientation, distance from mirror line	A1, A1	4
3	**(a)** even + suitable reason	A1	
	(b) (very) unlikely + suitable reason	A1	
	(c) certain + suitable reason	A1	3
4	$20 \times 4\frac{1}{2} + 40$	M1	
	$= 130$	A1	2
5	**(a)** **(i)** 5390	A1	
	(ii) 5400	A1	
	(b) **(i)** $100 \times 5 = 500$	M1, A1	
	(ii) $\frac{18}{4} \rightarrow 4$	M1, A1	6
6	**(a)** 15.00 – 5 = 10.00 am	A1	
	(b) 5.00 + 11 = 16.00 = 4.00 pm	A1	2

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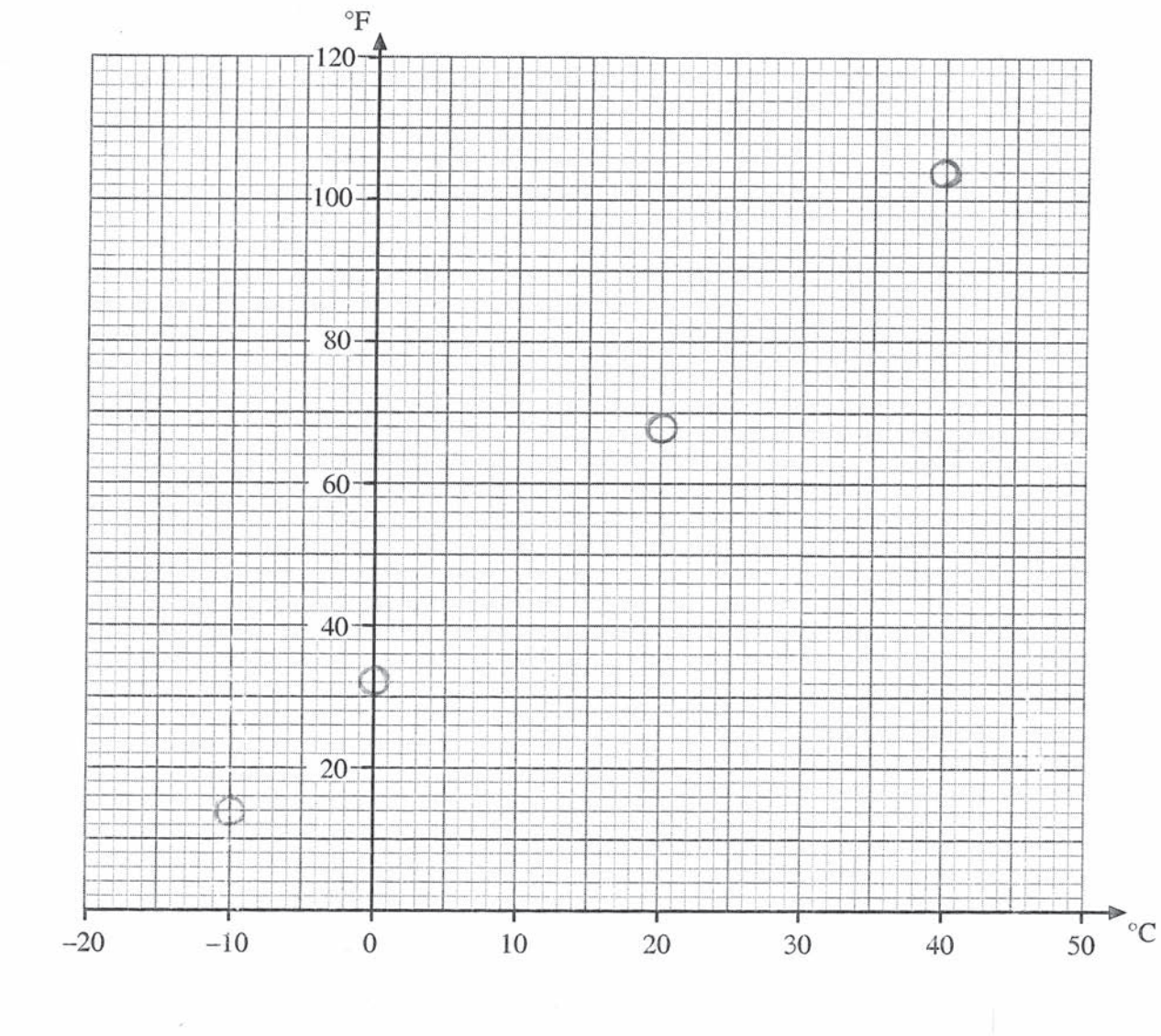
			AVAILABLE MARKS
7	**(a)** each correct pair	A1, A1	
	(b) 4	A1	
	(c)  **or** 	A1	
	(d) 	A1	5
8	**(a)** **(i)** 11	A1	
	(ii) 14	A1	
	(b) 6 and 7	A1	
	(c) divide 80 by 2 or similar	A1	4
9	**(a)** 4 points plotted correctly (2 points plotted correctly A1)	A2	
	straight line drawn	A1	
	(b) **(i)** 86 °F	A1	
	(ii) –7 °C	A1	5

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			AVAILABLE MARKS
10	**(a)** correct enlargement	A2	
	(b) 9	A2	4
11	4, 16; 4, 36; 9, 25; etc	A2 (only)	2
12	**(a)** black	A1	
	(b) red	A1	
	(c) $0.15 \times 600 = 90$	M1, A1	4
13	$2n \times 2n$ $= 4n^2$ which can be divided by 4	MA1 MA1	2
14	**(a)** **(i)** enlargement scale factor 2 centre (1, 2)	MA3	
	(ii) rotation 90° clockwise about (0, –2)	MA3	
	(b) image moved 1 unit right and 5 down	MA1 MA1	8
15	$v - u = gt$ $g = \frac{v-u}{t}$	MA1 MA1	2
		Total	**56**

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GCSE MATHEMATICS SUMMER 2009
MODULE N5-1
OVERLAY QUESTION 9



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2009

Mathematics



Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

GMN51

WEDNESDAY 14 JANUARY

1.30 pm – 2.30 pm

TIME

1 hour.

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.
You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

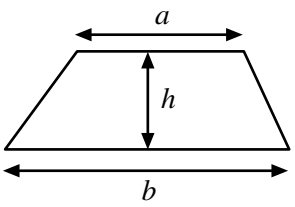
For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Total Marks	

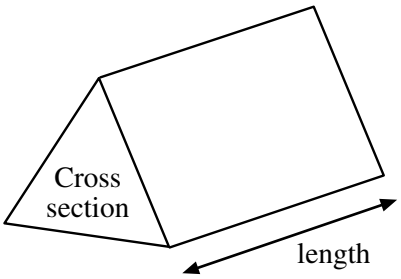
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Formula Sheet

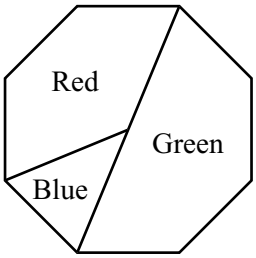
Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



1



The 8 sided spinner can land on any of three colours red, blue or green.

(a) On which colour is it least likely to land?

Answer _____ [1]

(b) Write down a suitable **word** to describe the chance of the spinner landing on green.

Answer _____ [1]

(c) Write down a suitable **word** to describe the chance of the spinner landing on yellow.

Answer _____ [1]

(d) Write down a suitable **word** to describe the chance of the spinner landing on red, blue or green.

Answer _____ [1]

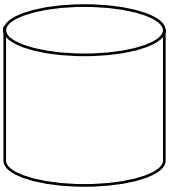
Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

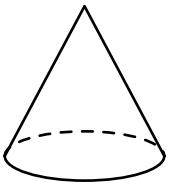
2 Write the correct mathematical name for each of the following solids.

(a)



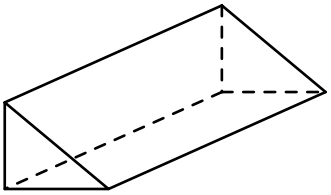
Answer _____ [1]

(b)



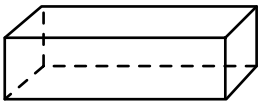
Answer _____ [1]

(c)



Answer _____ [1]

(d)



Answer _____ [1]

(e) Mark **one** right angled corner in each of the solids in **(c)** and **(d)**. [2]

Examiner Only	
Marks	Remark

3 **(a)** Write 7687 corrected to the nearest hundred.

Answer _____ [1]

(b) **Estimate** how many books costing £4.19 each could be bought for £30

Answer _____ books [2]

(c) **Estimate** the total weight of 78 turkeys whose average weight is 3.2 kilograms.

Answer _____ kg [2]

(d) **Estimate** the length of the side of a square garden whose area is 85 square metres.

Answer _____ m [1]

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Examiner Only	
Marks	Remark

4 Clara earns £7 per hour for working 30 hours Monday to Friday.
On Saturday she works from 10 am to 3 pm for £10 per hour.
How much is her total pay for the week?

Answer £ _____ [4]

---

5 **(a)** **B U S**

From the letters in the word BUS (above) choose

(i) a letter with one vertical line of symmetry

Answer _____ [1]

(ii) a letter with one horizontal line of symmetry

Answer _____ [1]

(iii) a letter with rotational symmetry of order 2

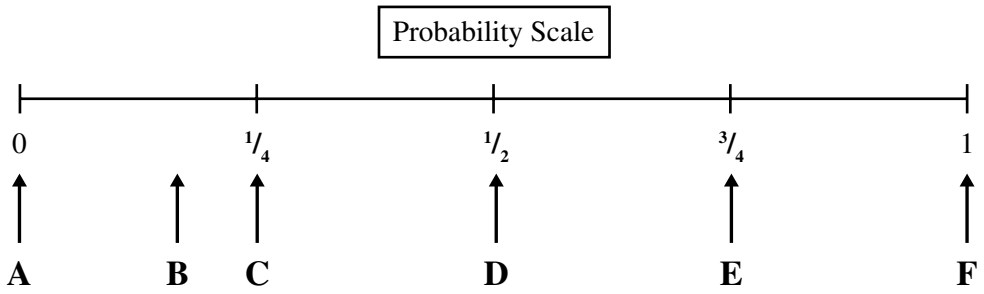
Answer _____ [1]

(b) _____ **A T**

Write a letter with exactly two lines of symmetry, in the blank space to create a new word. [1]

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6



Match each of the events below with a letter from the probability scale above.

A season selected at random is Winter. Answer Letter _____[1]

A triangle has 3 sides. Answer Letter _____[1]

A football captain wins the toss of a coin. Answer Letter _____[1]

A fair dice is tossed and lands on a 6. Answer Letter _____[1]

Examiner Only	
Marks	Remark

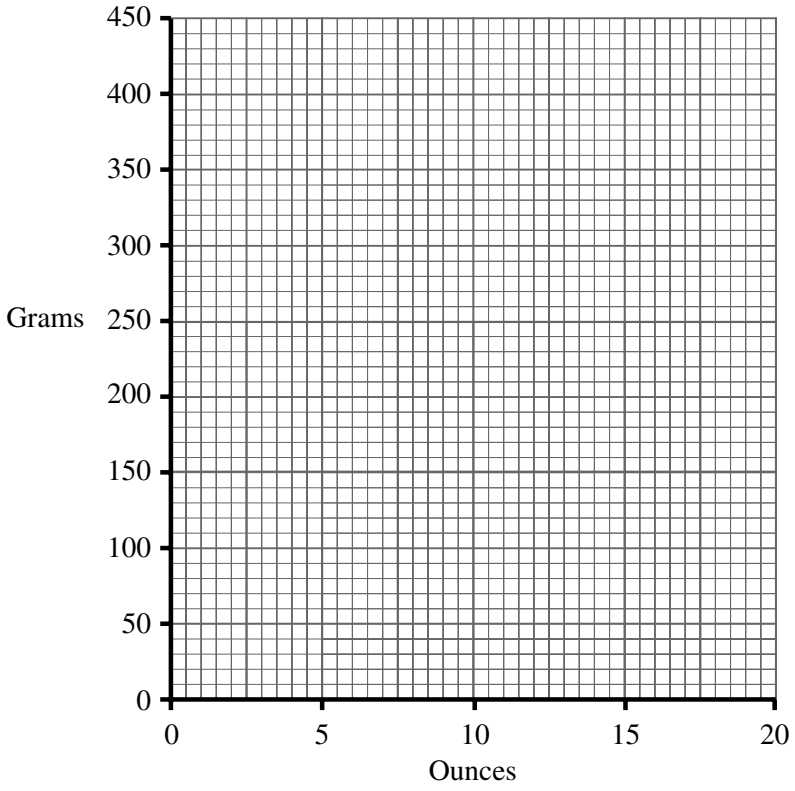
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Examiner Only	
Marks	Remark

7 Jenna decides to make pancakes but her scales measure in grams and her recipe is in ounces.

(a) Use the values in the table to plot the conversion graph.

Ounces	0	5	10	15
Grams	0	142	284	426



[3]

(b) Use your conversion graph to convert 7 ounces into grams.

Answer _____ grams [1]

(c) The recipe requires 12 ounces of flour. Jenna puts all her flour onto the scales and it reads 350 grams. Does she have enough flour for her recipe? Explain your answer.

Answer _____ because _____

_____ [2]

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8 **(a)** **(i)** Calculate $6 + 3 \times 7$

Answer _____ [1]

(ii) $3 \times (-7)$

Answer _____ [1]

(iii) $-48 \div (-6)$

Answer _____ [1]

(b) **Estimate** the value of 41.73×9.62

Answer _____ [1]

(c) Write down the reciprocal of 7

Answer _____ [1]

Examiner Only	
Marks	Remark

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9 The timetable gives the times of early morning trains from Norwich to London, Liverpool Street.

NORWICH	Dep	0500	0520	0530	0600	0630	0655	0710	0755	0805	0835	0905
Diss	Dep	0518	....	0547	0618	0647	0713	0728	....	0823	0852	0922
Stowmarket	Dep	0531	....	0558	0630	0658	0725	0740	....	0835	0903	0933
IPSWICH	Arr	0541	0553	0610	0641	0709	0736	0751	0828	0846	0913	0944
	Dep	0543	0553	0612	0642	0710	0737	0752	0830	0847	0915	0945
Manningtree	Dep	0553	....	0620	0652	0721	....	0802	....	....	0925	....
COLCHESTER	Dep	0604	0610	0632	0704	0732	....	0812	....	0906	0935	1003
Chelmsford	Dep	....	....	....	....	....	....	....	....	....	....	1020
LONDON LIVERPOOL STREET	Arr	0653	0700	0721	0756	0826	0848	0903	0933	0955	1025	1054

Jake wishes to travel from **Ipswich** to London, Liverpool Street station.
He arrives at **Ipswich** station at 0745 and catches the next train to London, Liverpool Street.
How long is his train journey?

Answer _____ hr _____ mins [3]

Examiner Only	
Marks	Remark

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10 Some of the ingredients required to make 30 chocolate muffins are listed below.

600 g plain flour
540 g caster sugar
300 g chocolate chips
24 fl oz milk
6 medium eggs

Calculate the amounts of ingredients required to make 20 chocolate muffins.

_____ g plain flour

_____ g caster sugar

_____ g chocolate chips

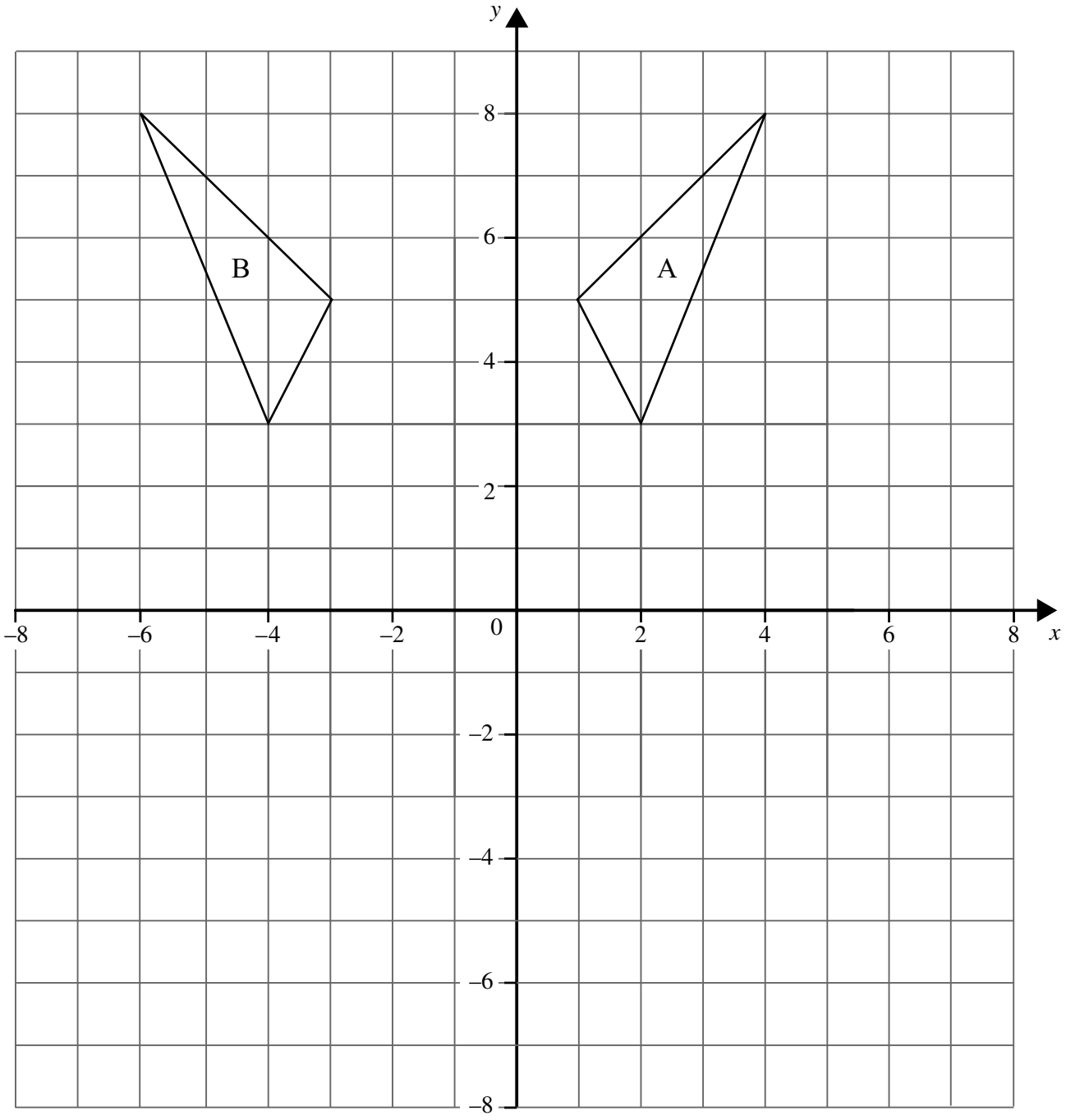
_____ fl oz milk

_____ medium eggs [3]

Examiner Only	
Marks	Remark

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11



Examiner Only	
Marks	Remark

(a) Describe fully the **single** transformation which maps triangle A to triangle B.

_____

_____[2]

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(b) Translate triangle A by $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$. Label the new triangle C. [2]

(c) Rotate triangle A 90° clockwise about the point (0, 2).
Label the new triangle D. [2]

Examiner Only	
Marks	Remark

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12 **(a)** $S = \dfrac{a}{1-r}$ Find S when $a = 12$ and $r = \frac{1}{2}$

Answer $S =$ _____ [2]

(b) List the values of the **integer *n*** such that

$-4 < 3n < 9$

Answer _____ [3]

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 N5 Paper 1

(Non-calculator)

Foundation Tier

[GMN51]

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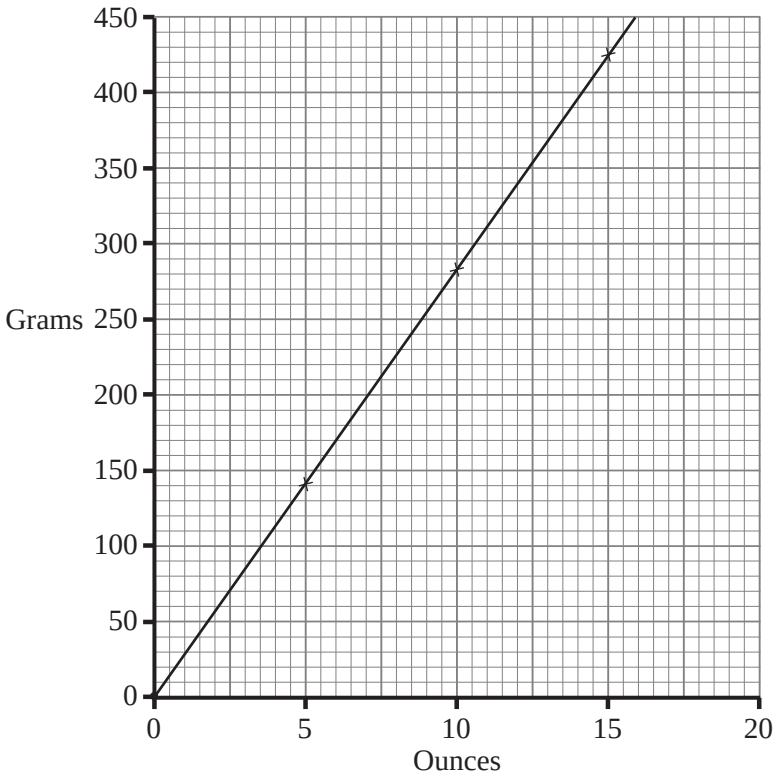
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			AVAILABLE MARKS
1	**(a)** Blue	A1	
	(b) Even, fifty/fifty etc	A1	
	(c) Impossible	A1	
	(d) Certain	A1	4
2	**(a)** cylinder	A1	
	(b) cone	A1	
	(c) triangular prism	A1	
	(d) cuboid	A1	
	(e) corner in **(c)**, **(d)**	A1, A1	6
3	**(a)** 7700	A1	
	(b) $30 \div 4 \rightarrow 7$	M1, A1	
	(c) $80 \times 3 = 240$	M1, A1	
	(d) 9 to 9.5	A1	6
4	$7 \times 30 = £210$	MA1	
	10 to $3 \rightarrow 5$ hours	MA1	
	$5 \times £10 = £50$	MA1	
	Total £260	A1	4
5	**(a)** **(i)** U	A1	
	(ii) B	A1	
	(iii) S	A1	
	(b) **H**AT	A1	4

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			AVAILABLE MARKS
6	C, F, D, B	A1 each	4
7	**(a)** See overlay. Points A2 (allow A1 for 2 points); Line A1		



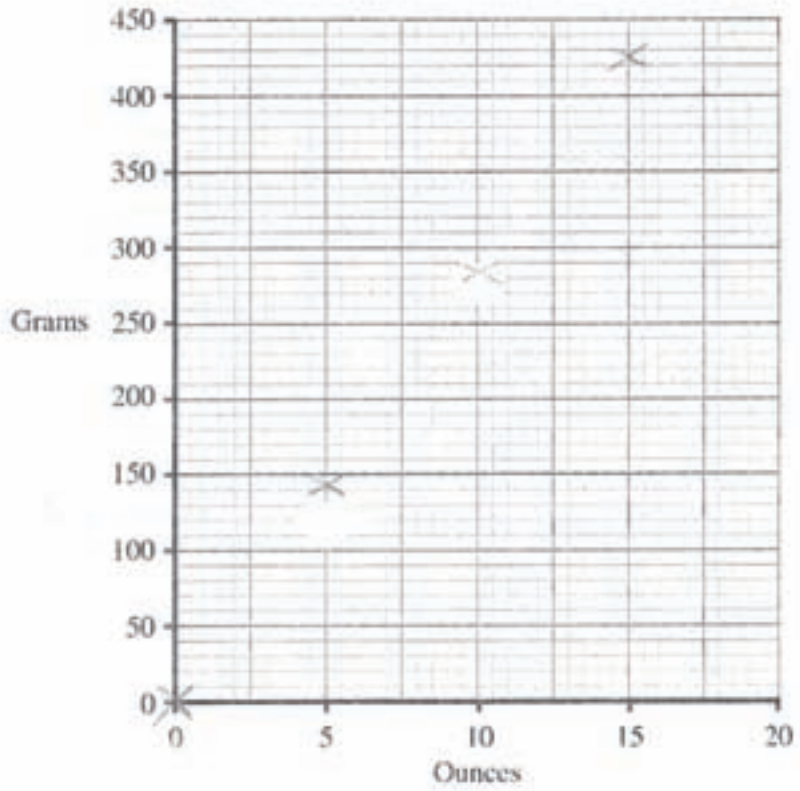
	(b) Approximately 200 (from graph)	A1	
	(c) Yes because 350 grams is approximately 12.4 ounces	M1, A1	6
8	**(a)** **(i)** 27	A1	
	(ii) –21	A1	
	(iii) 8	A1	
	(b) 400	A1	
	(c) 1/7	A1	5
9	0752 train identified	MA1	
	0752 to 0903 = 71 minutes	MA1	
	= 1 hour 11 minutes	MA1	3

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			AVAILABLE MARKS
10	400 or $\frac{2}{3}$ 360	MA1	
	200	A1	
	16 4	A1	3
11	**(a)** Reflection in line $x = -1$	A1, A1	
	(b) Correct translation	A1, A1	
	(c) See overlay 90° clockwise, correct centre used	A1, A1	6
12	**(a)** $S = \frac{12}{(1-\frac{1}{2})}$		
	$= \frac{12}{\frac{1}{2}}$	MA1	
	$= 24$	A1	
	(b) $-\frac{4}{3} < n < 3$	MA1	
	$n = -1, 0, 1, 2$	A2	5
		Total	**56**

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GCSE MATHEMATICS JANUARY 2009
MODULE N5-1
OVERLAY QUESTION 7



GCSE MATHEMATICS JANUARY 2009
MODULE N5-1
OVERLAY QUESTION 11

