CCEA GCSE MATHEMATICS

MATHS



EXAM QUESTION PACK

UNIT T5 PAPER 1 (NON-CALCULATOR) FOUNDATION TIER GMT51 PAPERS

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2016

Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier



GMT51

[GMT51]

WEDNESDAY 13 JANUARY, 9.15 am–10.15 am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in blue or black ink only. **Do not write with a gel pen.**
Answer **all eighteen** questions.
All 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

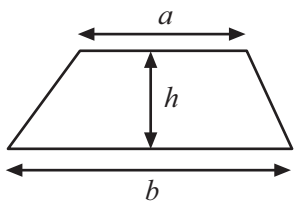
The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Question **12**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

9861

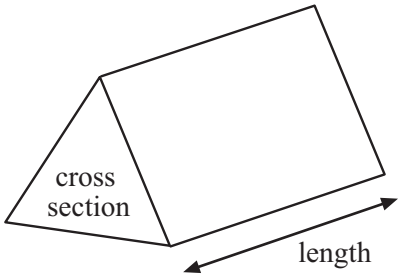
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Formula Sheet

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



Volume of prism = area of cross section × length



9861

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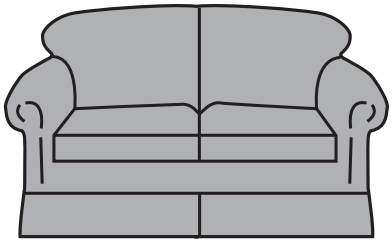
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(Questions start overleaf)

[Turn over

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1



Andy and Bill bought the same type of sofa in two different shops.

Andy paid £180 deposit and £40 per month for 12 months.

Bill made one payment of £600

Who paid less for the sofa and how much less did he pay?

Answer _____ , £ _____ [4]

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2 **(a)** **Estimate** how many clocks costing £6.95 each could be bought for £67

Show your working.

Answer _____ [2]

(b) **Estimate** the total length of 43 caravans whose average length is 6.7 metres.

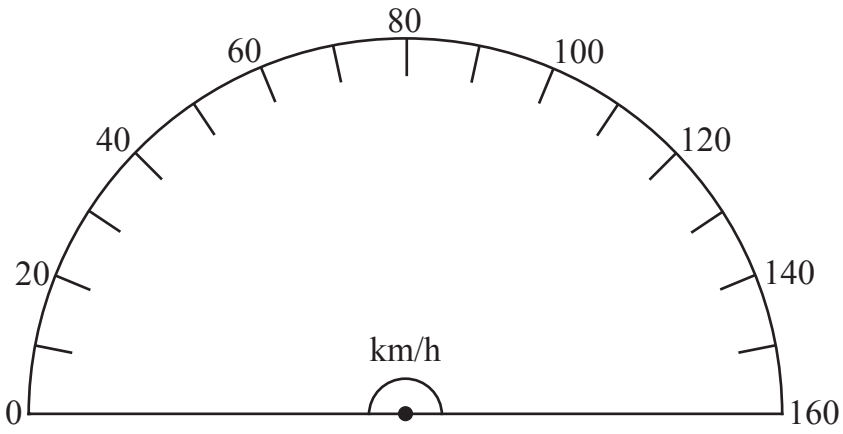
Show your working.

Answer _____ m [2]

[Turn over

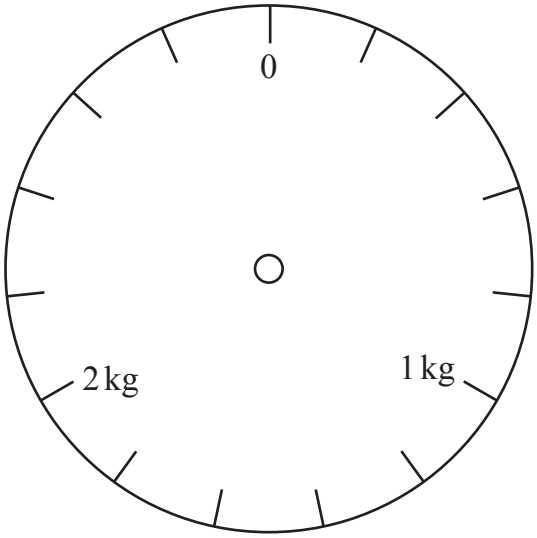
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3 **(a)** Draw an arrow to show 55 km/h on the speedometer.



[1]

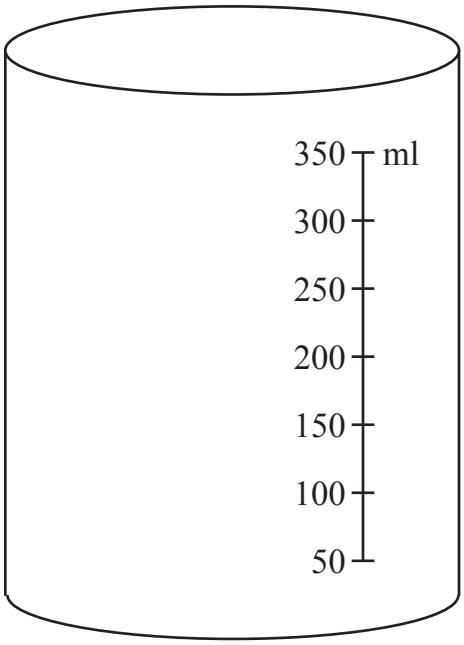
(b) Draw an arrow to show 600 g on the weighing scale.



[1]

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(c) Draw an arrow to show 225 ml on the measuring jug.

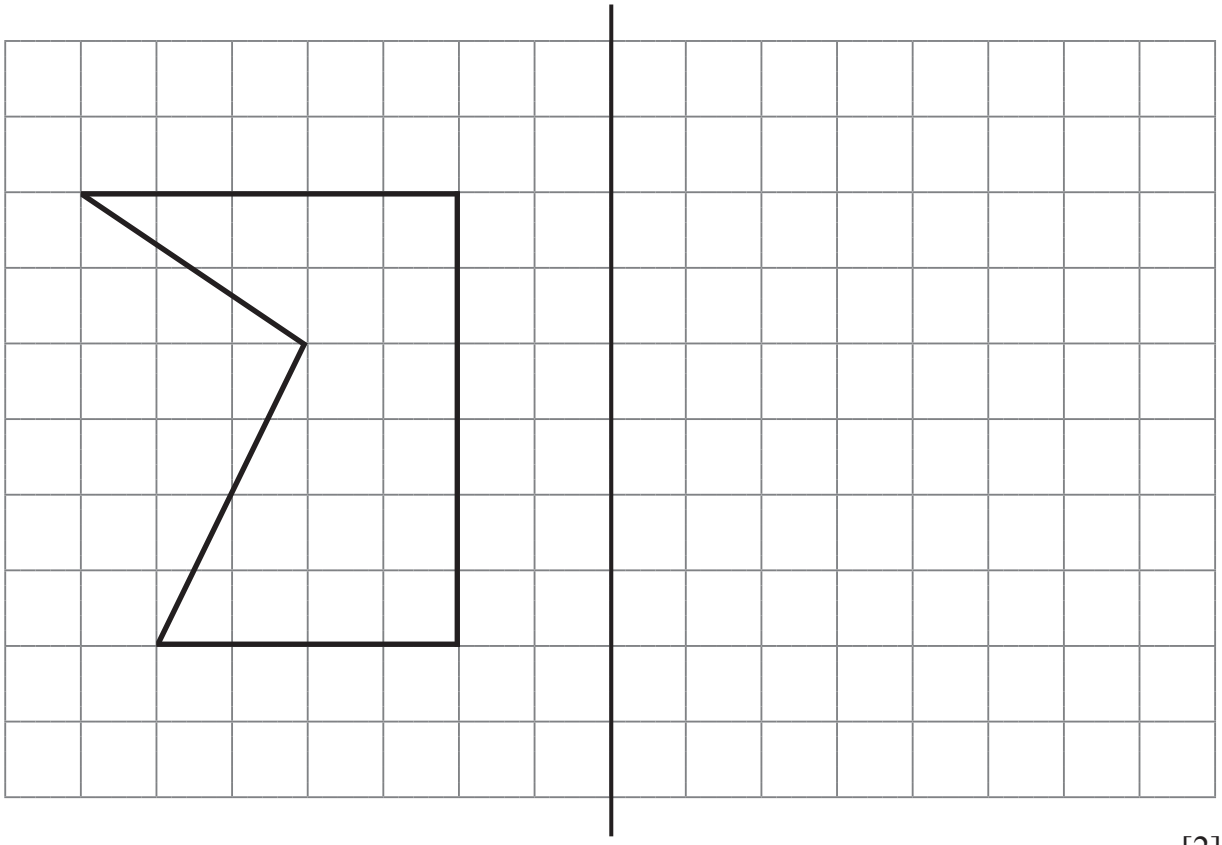


[1]

[Turn over

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4 On the grid below draw the reflection of the shape in the given line.



[2]

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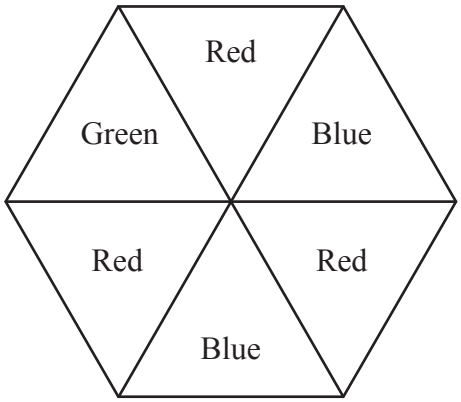
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(Questions continue overleaf)

[Turn over

5 **(a)** Here is a fair 6-sided spinner.



Jayne will spin this spinner once.

The spinner will land on one of the colours.

Circle the word that best describes the chance of each of the following events.

(i) The spinner will land on Green

impossible unlikely even likely certain

(ii) The spinner will land on Red

impossible unlikely even likely certain

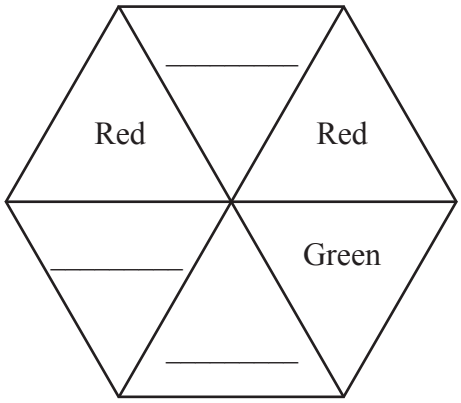
(iii) The spinner will land on White

impossible unlikely even likely certain

[3]

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(b) Here is a different fair 6-sided spinner.



Wayne will spin this spinner once.

The spinner is more likely to land on Green than to land on Red.

Fill in the missing colours on the spinner above to show how you think this spinner might look. [1]

6 In a raffle all 400 tickets were sold.

The tickets were numbered from 1 to 400

One ticket is to be drawn at random to win the prize.

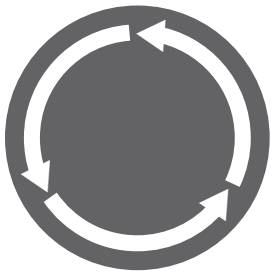
What is the probability that the winning ticket will be numbered greater than 275?

Answer _____ [2]

[Turn over

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7



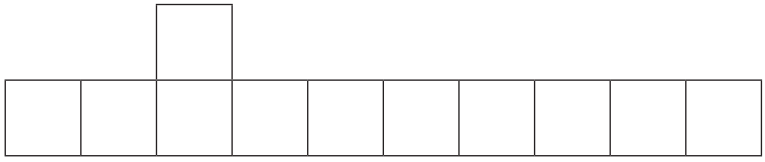
(a) How many lines of symmetry does the sign have?

Answer _____ [1]

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

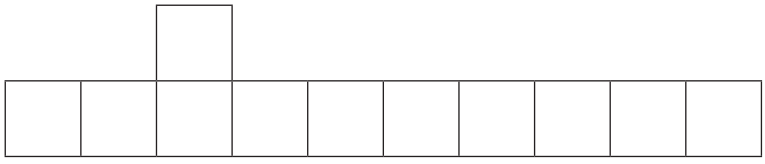
Answer _____ [1]

8 **(a)** Add one square to the shape below to make a shape with rotational symmetry of order 2



[1]

(b) Add one square to the shape below to make a shape with one line of symmetry.



[1]

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9 Calculate

(a) $9 + 6 \div 3$

Answer _____ [1]

(b) $7 + 3(9 - 5)$

Answer _____ [1]

10 Put brackets in the following statements to make them true.

(a) $7 \times 2 + 9 - 5 = 72$ [1]

(b) $6 - 2 \times 3 + 4 = 28$ [1]

[Turn over

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11 Six hundred pupils in a school completed a survey.

The survey was completed by 275 girls.

The survey found that 83 boys were left-handed and that 196 girls were right-handed.

Use this information to complete the two-way table below.

	Boys	Girls
Left-handed		
Right-handed		

[2]

Quality of written communication will be assessed in this question.

12 The petrol consumption of a car is 64 miles to the gallon.

How many miles should the same car do to the litre?

1 gallon = 8 pints. **Show your working clearly.**

Answer _____ [2]

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13 **(a)** Use the formula P = 3Q + 7R to find P when Q = 8 and R = 3

Answer P = _____ [2]

(b) Use the formula V = 3W + 9X to find X when V = 57 and W = 7

Answer X = _____ [3]

(c) $d = \frac{e - f}{g}$

Calculate the value of d when $e = -8$, $f = 12$ and $g = 4$

Answer d = _____ [2]

[Turn over

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14 **(a)** Write down the reciprocal of 9

Answer _____ [1]

(b) Calculate (–42) ÷ (–6)

Answer _____ [1]

15 In a game at a fairground, each of 300 people pays 50p to play.

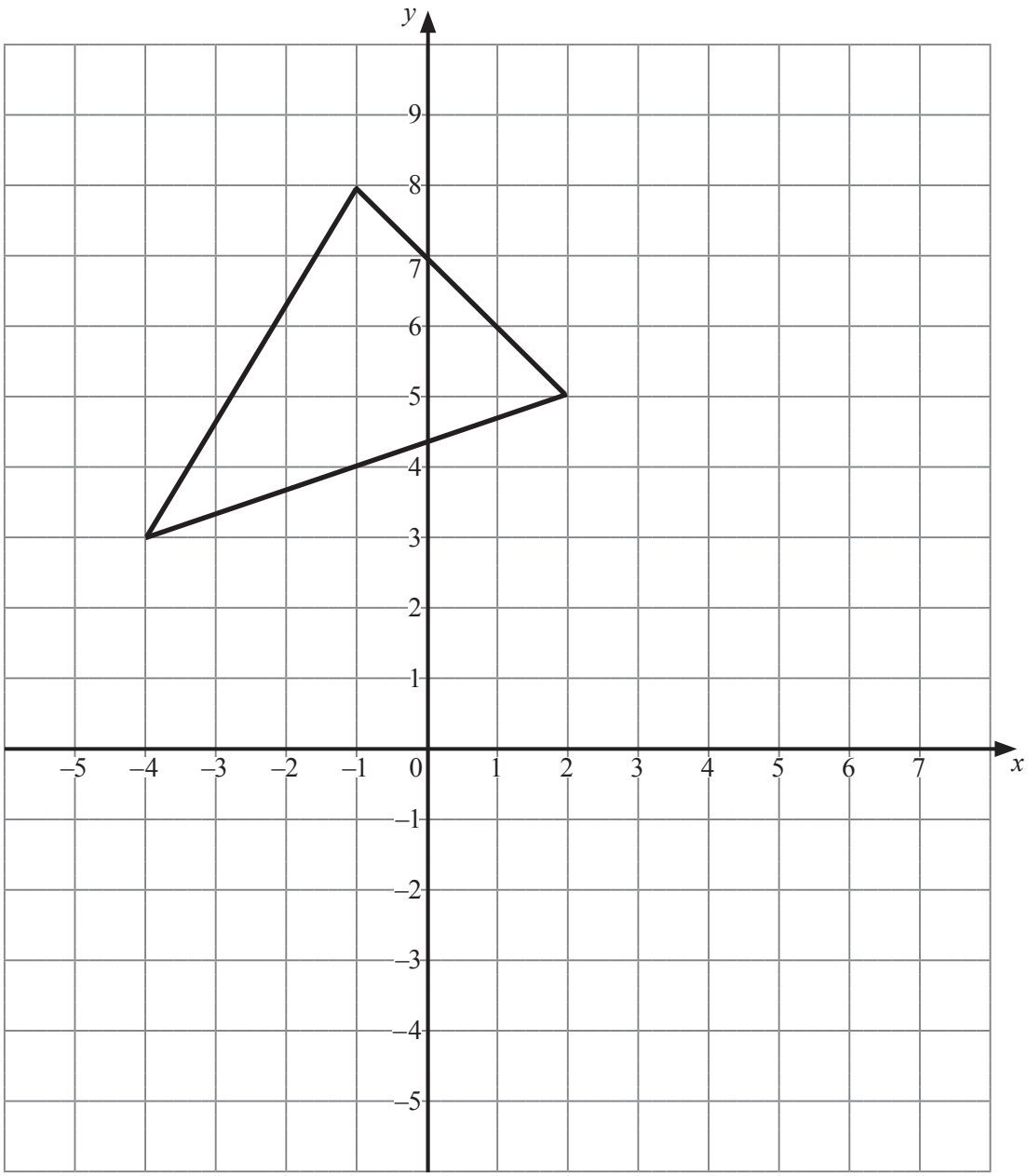
Forty of the 300 people each win a prize worth £1.80 There are no other prize-winners.

What profit does the game make?

Answer £ _____ [2]

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16



(a) On the diagram above, reflect the given triangle in the line $y = 2$

Label your answer A. [2]

(b) On the same diagram, translate the given triangle by $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$

Label your answer B. [2]

[Turn over

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17 Michael tosses a fair coin and rolls a fair 6-sided dice.

Work out the probability that the outcome is a head and a three.

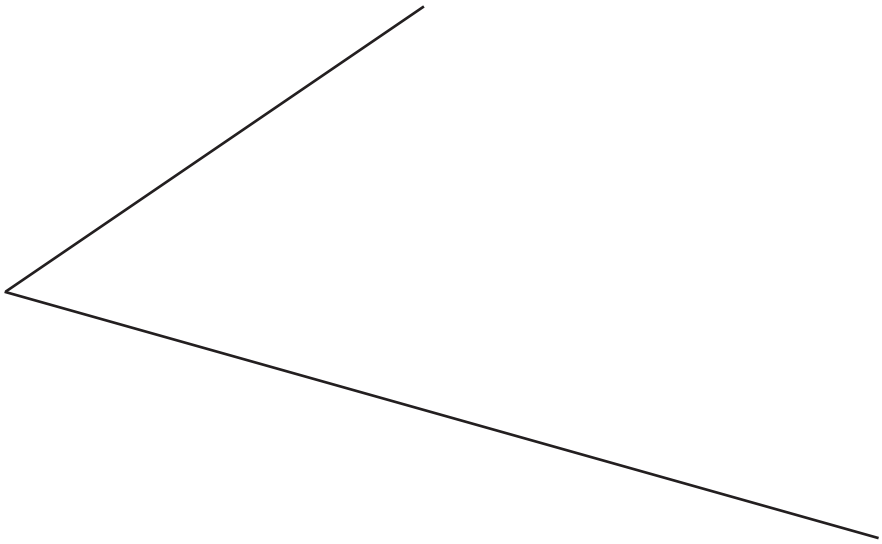
You must show how you found your answer.

Answer _____ [2]

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18 Using a ruler and compasses only, construct the bisector of the angle below.

You must show all construction lines.



[2]

THIS IS THE END OF THE QUESTION PAPER

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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	

Examiner Number

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Rewarding Learning

General Certificate of Secondary Education
January 2016

Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier

[GMT51]

WEDNESDAY 13 JANUARY

9.15 am–10.15 am

MARK SCHEME

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GCSE MATHEMATICS

Introduction

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

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

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

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

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

Positive marking

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

Some common examples of this occur in the following cases:

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

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

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

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General Marking Advice

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

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

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

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

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

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

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

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

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

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

Quality of written communication

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

In particular, candidates must:

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

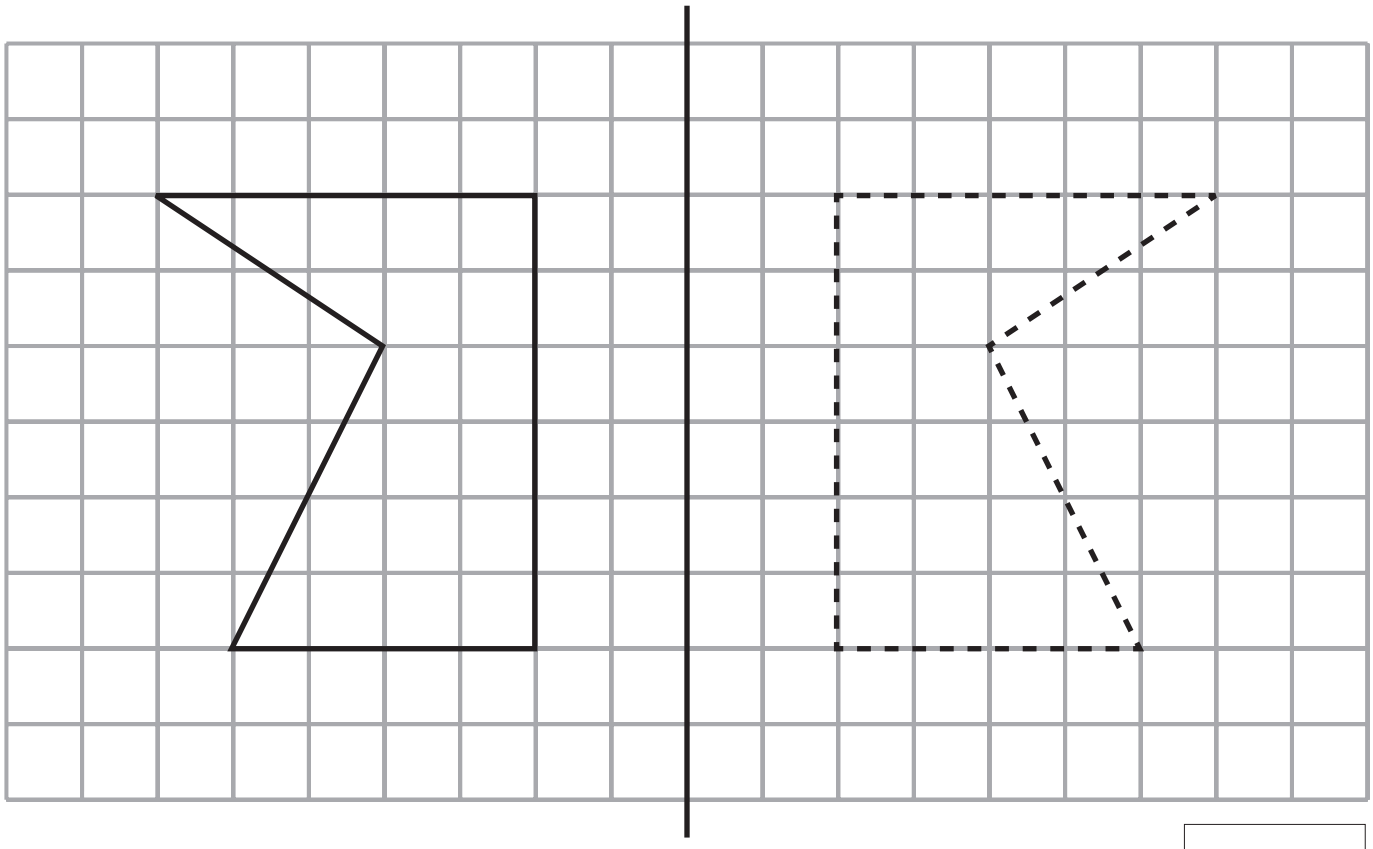
(ii) select and use a form and style of writing appropriate to their purpose and to complex subject matter (i.e. reasoning, explanation or argument is correct and appropriately structured to convey mathematical reasoning); and

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

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

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			AVAILABLE MARKS
1	$40 \times 12 = 480$ $180 + 480 = 660$ Bill, £60	MA1 MA1 A1 A1	4
2	**(a)** $67 \div 7 \rightarrow 9$ $(70 \div 7 \rightarrow 10$ allow MA1) $70 \div 7 \rightarrow 10$ ans $= 9 \leftarrow$ M1 A1	M1 A1	
	(b) $40 \times 7 = 280$	M1 A1	4
3	**(a)** arrow at 55	A1	
	(b) arrow at 600	A1	
	(c) arrow at 225	A1	3
4	correct reflection (A1 for 4 correct vertices)	A2	2



5	**(a)** **(i)** unlikely	A1	
	(ii) even	A1	
	(iii) impossible	A1	
	(b) At least 2 sectors marked ‘Green’ and none marked ‘Red’	A1	4

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			AVAILABLE MARKS
6	$400 - 275 = 125$	MA1	2
	$\frac{125}{400}$	A1	
7	**(a)** none	A1	
	(b) 3	A1	2
8	**(a)** square in correct position	A1	
	(b) square in correct position (choice of two answers)	A1	2
9	**(a)** 11	A1	
	(b) 19	A1	2
10	**(a)** $7 \times (2 + 9) - 5 = 72$	A1	
	(b) $(6 - 2) \times (3 + 4) = 28$	A1	2
11	<table><tr><td>83</td><td>79</td></tr><tr><td>242</td><td>196</td></tr></table> (A1 for 3 correct)	A2	2
12	1 litre $\cong$ 1.75 pints or equivalent	C1	
	8 miles to the pint and 6 miles to $\frac{3}{4}$ pint so 14 to the litre	C1	2
13	**(a)** $24 + 21$	MA1	
	45	A1	
	(b) $57 = 21 + 9X$	MA1	
	$9X = 36$	MA1	
	$X = 4$	MA1	
	(c) $\frac{-20}{4}$	MA1	
	-5	A1	7
14	**(a)** $\frac{1}{9}$	A1	
	(b) 7	A1	2

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			AVAILABLE MARKS
15	$300 \times 0.50 - 40 \times 1.80$ or $150 - 72$	M1	
	78	A1	2
16	**(a)** Correct reflection drawn (A1 for 2 vertices correct)	A2	
	(b) 4 right	A1	
	2 down	A1	4
17			

	1	2	3	4	5	6
H	H1	H2	H3	H4	H5	H6
T	T1	T2	T3	T4	T5	T6

M1

$\frac{1}{12}$ A1 2

18	Construction arcs	M1	
	Accurate angle bisector drawn	A1	2
		Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2015

Mathematics

Unit T5 Paper 1

(Non-calculator)
Foundation Tier



[GMT51]

GMT51

TUESDAY 26 MAY, 1.30 pm–2.30 pm

TIME

1 hour.

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The total mark for this paper is 50.
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Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Questions **2(b)** and **17**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

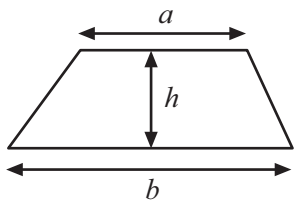
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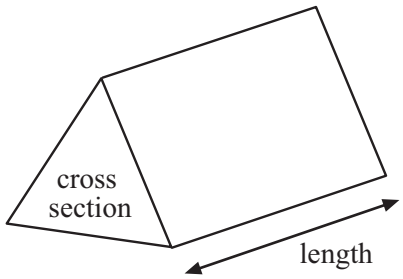
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Formula Sheet

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



Volume of prism = area of cross section × length



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1 Michelle is making sandwiches for a party. She uses the formula below to calculate the number of sandwiches she should make.

number of sandwiches = number of people × four + sixty

(a) Use the formula to calculate how many sandwiches she should make for 145 people.

Answer _____ [2]

(b) Michelle needs 145 cans of cola for the party.
The cola can only be bought in packs of 12 at a cost of £4 per pack.
How much will it cost Michelle to buy enough cola for the party?

Answer £ _____ [3]

[Turn over

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Quality of written communication will be assessed in part (b) of this question.

2 A weather centre recorded the rainfall for July 2013 as 61.2 mm.

(a) Use this to **estimate** the total rainfall for 2013

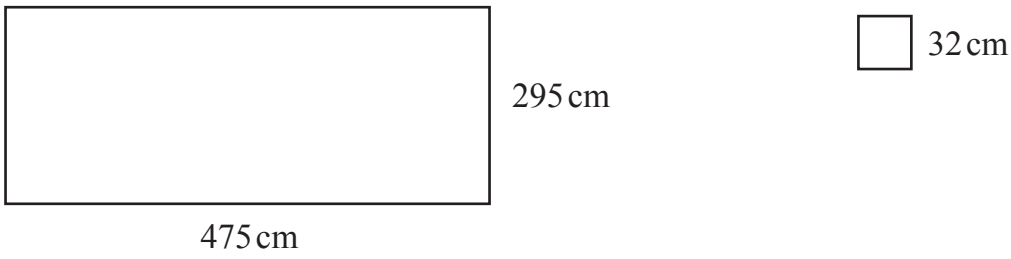
Answer _____ mm [2]

(b) Comment on how good this estimate is likely to be.

_____

_____ [2]

3 A rectangular room measures 475 cm by 295 cm.
Estimate the number of square tiles of side 32 cm needed to tile the floor.
Show all your working clearly.



Answer _____ [3]

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4 From the list of words given, write the best word to describe the chance of these events happening:

Impossible **Unlikely** **Evens** **Likely** **Certain**

(a) a day of the week does not have a letter y

Answer _____ [1]

(b) a light bulb will 'blow' when the light is switched on.

Answer _____ [1]

(c) getting an odd number on one roll of a dice.

Answer _____ [1]

5 Write a number in each box to make the calculation correct.

(a) $4 \times \square + 6 = 38$ [1]

(b) $4 \times 6 + \square = 38$ [1]

(c) $4 \times \square - 6 = 38$ [1]

[Turn over

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6 A drill costs £38.50 plus 20% VAT.
Calculate the VAT.

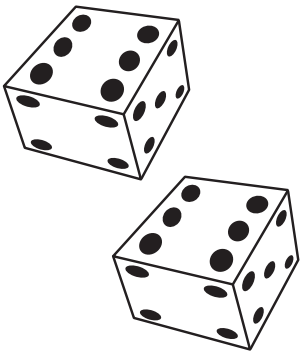
Answer £ _____ [2]

7 n represents any whole number.
n and the next whole number on the number line and the next one after that are added together.
What type of whole number is the answer?
Show your working clearly.

Answer _____ [2]

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8 To start a game, Darragh must score **a total** of either 2 or 5 or 7 from throwing two fair dice.



(a) Complete the table to show all the possible totals.

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5				
4	5	6				
5	6	7				
6	7	8				

[2]

(b) What is the probability of Darragh getting started straight away?

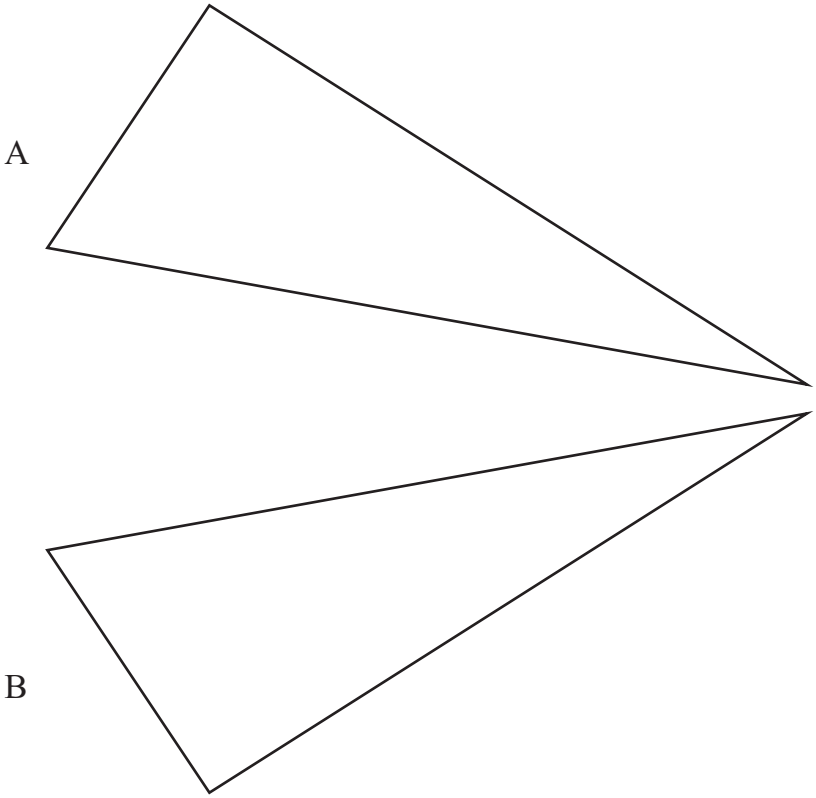
Answer _____ [2]

[Turn over

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9 Triangle A is reflected in a line to give its image Triangle B.

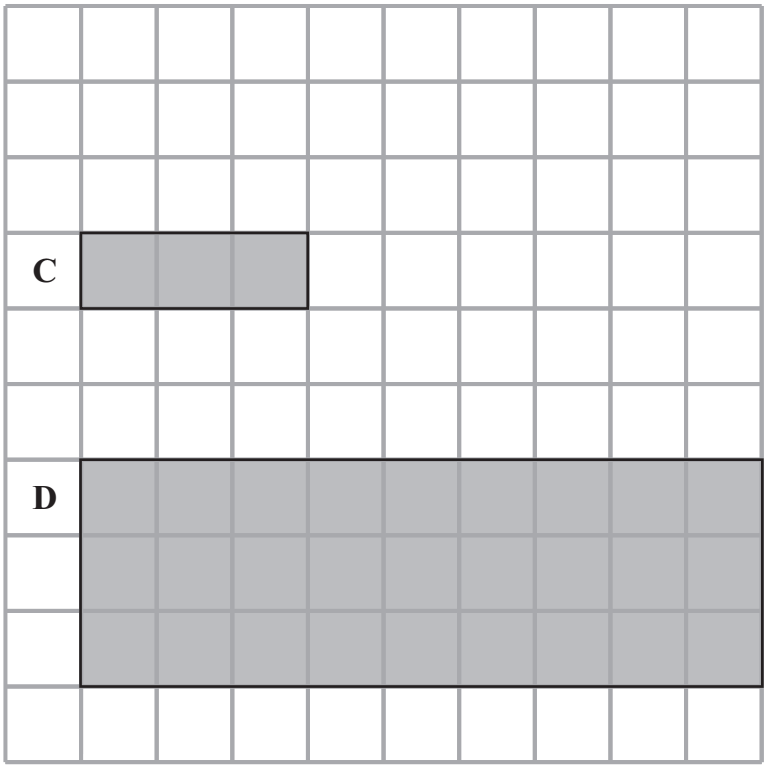
Draw the line of reflection.



[1]

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10 Rectangle C is enlarged to give rectangle D.
What is the scale factor of enlargement?

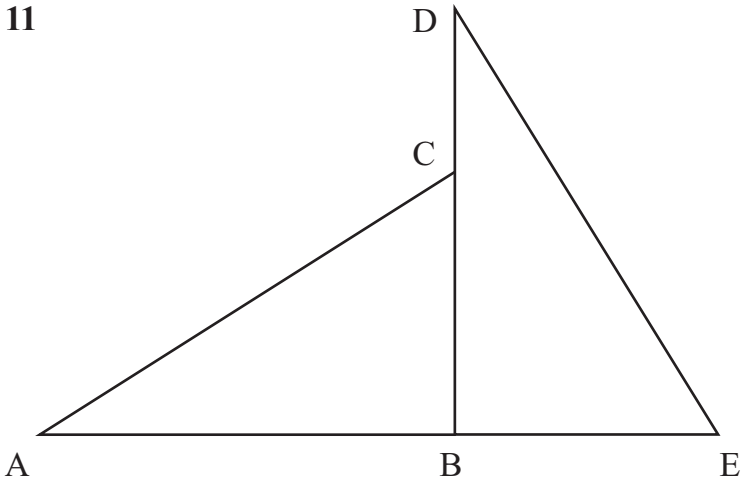


Answer _____ [1]

[Turn over

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11



Triangle ABC is rotated 90° clockwise about B.

(a) Name a side equal in length to BC.

Answer _____ [1]

(b) Name an angle equal in size to angle BAC.

Answer _____ [1]

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12 A bag contains 21 pieces of fudge.
6 pieces are vanilla and 8 pieces are walnut. The rest are raisin.
Josh takes a piece of fudge at random from the bag.
What is the probability that it is

(a) not vanilla,

Answer _____ [1]

(b) raisin?

Answer _____ [1]

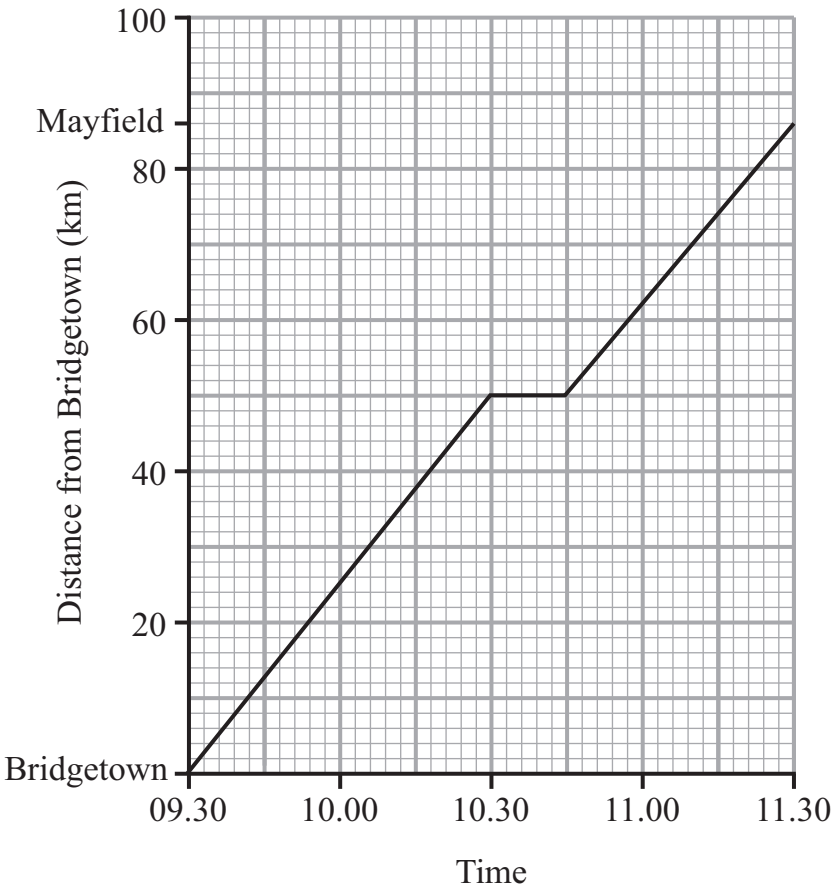
13 £X is shared equally among c children.
Write down a **formula** for the amount £A that each child should receive.

Answer _____ [2]

[Turn over

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14 The graph shows a journey by coach from Bridgetown to Mayfield.



(a) Give a practical explanation for the horizontal line on the graph.

Answer _____

_____ [1]

(b) Calculate the average speed for the complete journey from Bridgetown to Mayfield.

Answer _____ [3]

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15 Given that $32.5 \times 24 = 780$, write down the value of

(a) 32.5×2.4

Answer _____ [1]

(b) $78 \div 24$

Answer _____ [1]

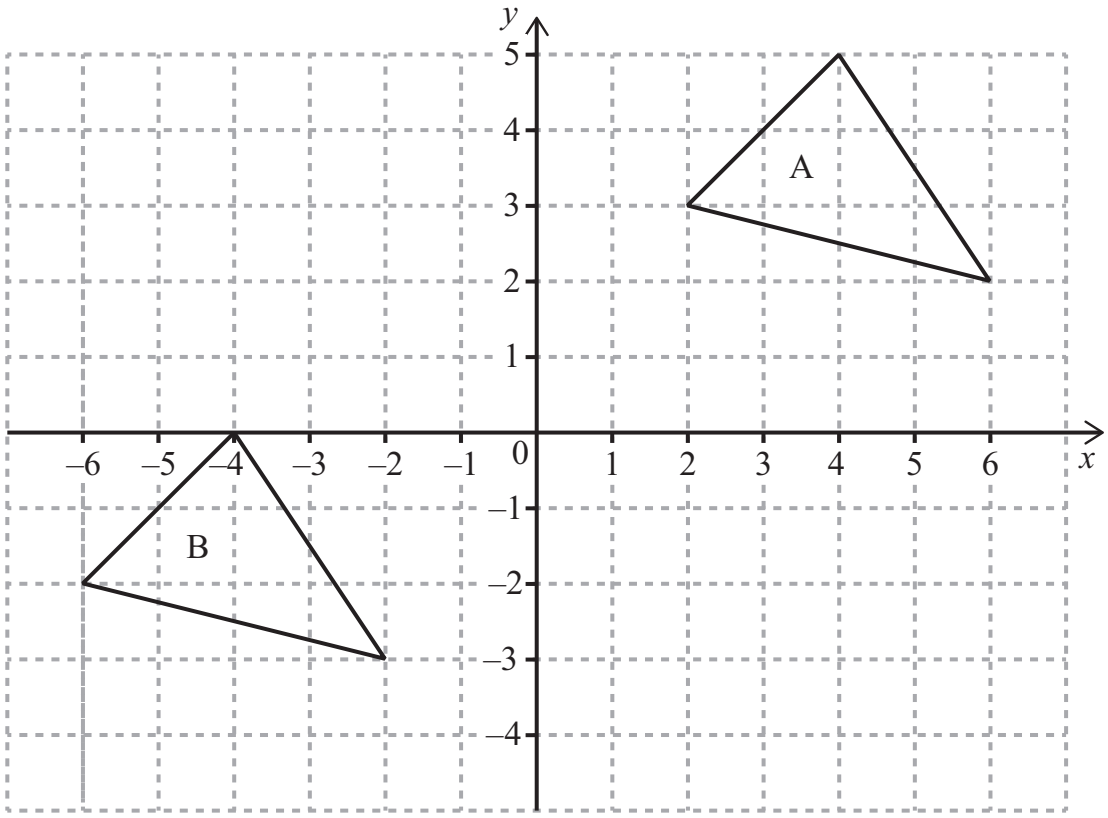
(c) 32.5×12

Answer _____ [1]

[Turn over

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16 **(a)** Reflect triangle A in the line $y = 1$



[2]

(b) Describe fully the single transformation that moves triangle A to triangle B.

_____

_____ [2]

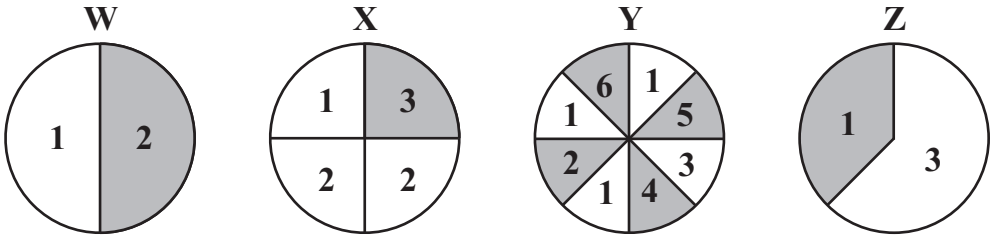
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Quality of written communication will be assessed in this question.

17 Aidan, Ben and Caitlin all spin a spinner 20 times each.
They keep track of their scores of 1, 2 and 3 using a tally chart.

	1	2	3
Aidan	𝍸 |	| | |	𝍸
Ben	𝍸 | |	| |	| | |
Caitlin	𝍸 |	| | | |	|

They all used the **same** one of the following four spinners.



Which spinner do you think they used?

Explain clearly why you have made this choice.

Answer Spinner _____ because _____

_____

_____

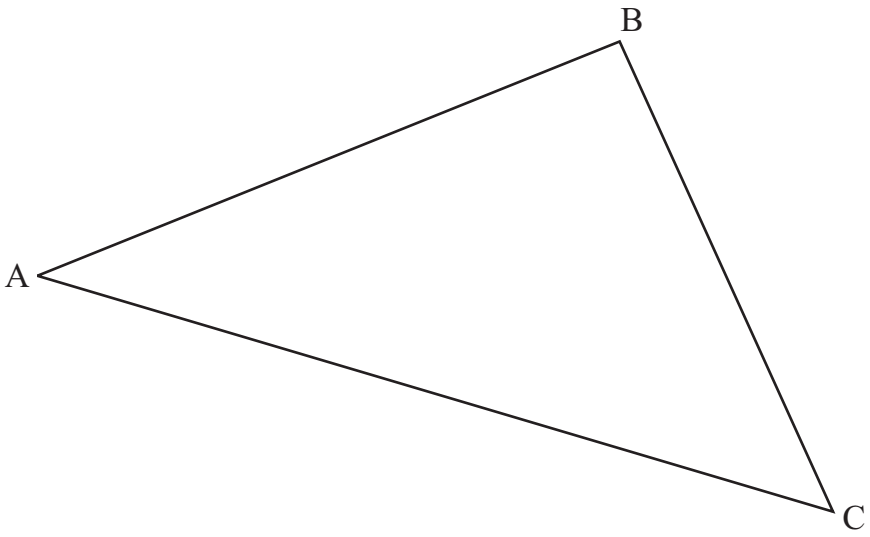
_____ [3]

[Turn over

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18 Use only a ruler and a pair of compasses to bisect the angle ABC in the triangle below.

Show all your construction arcs.



[2]

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For Examiner's use only	
Question Number	**Marks**
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17	
18	
Total Marks	

Examiner Number

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Rewarding Learning

General Certificate of Secondary Education
2015

Mathematics

Unit T5 Paper 1

(Non-calculator)
Foundation Tier

[GMT51]

TUESDAY 26 MAY, 1.30 p.m.–2.30 p.m.

MARK SCHEME

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GCSE MATHEMATICS

Introduction

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C indicates marks for quality of written communication.

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

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

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

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

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

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

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

Quality of written communication

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

In particular, candidates must:

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

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

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

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

				AVAILABLE MARKS
1	**(a)**	$145 \times 4 + 60$ $= 640$	MA1 A1	
	(b)	$145 \div 12$ $= 12R1$ or 12.08333 so 13 packs $13 \times 4 = £52$	M1 A1 MA1	5
2	**(a)**	$61 \times 10 = 610$ **or** $60 \times 10 = 600$ **or** $60 \times 12 = 720$	M1 A1	
	(b)	July likely to be a dry month compared to others and so may not be a good month to base annual rainfall on – likely to be an underestimate (or similar explanation)	C1 C1	4
3		$\frac{480}{30} = 16$	MA1	
		$\frac{300}{30} = 10$	MA1	
		$16 \times 10 = 160$	MA1	
		or		
		$480 \times 300 = 144\,000$	MA1	
		$30 \times 30 = 900$	MA1	
		$\frac{144\,000}{900} = 160$	MA1	3
4	**(a)**	Impossible	A1	
	(b)	Unlikely	A1	
	(c)	Evens	A1	3
5	**(a)**	8	A1	
	(b)	14	A1	
	(c)	11	A1	3
6		$38.50 \div 5 = 7.70$ **or** 10% of $38.50 = 3.85$, $3.85 \times 2 = 7.70$	M1 A1 M1 A1	2

			AVAILABLE MARKS
7	$n + n + 1 + n + 2 = 3n + 3 = 3(n + 1)$	M1	
	or numerical example, e.g. $4 + 5 + 6 = 15$, $3 + 4 + 5 = 12$		
	multiple of 3	A1	2
8	**(a)** All 16 scores correct	A2 (A1 for 12 correct)	
	(b) $\frac{11}{36}$	A1 (for identifying 11), A1 (for correct answer)	4
9	line	A1	1
10	3	A1	1
11	**(a)** BE	A1	
	(b) BDE	A1	2
12	**(a)** $\frac{15}{21}\left(\frac{5}{7}\right)$	A1	
	(b) $\frac{7}{21}\left(\frac{1}{3}\right)$	A1	2
13	$A = \frac{X}{c}$	A2 $\left(\text{allow [1] for } \textbf{expression } \frac{X}{c}\right)$	2
14	**(a)** Stopped at a café, stopped at a station to pick up other passengers; stopped to refuel (any reasonable practical explanation – not simply stopped)	A1	
	(b) $\frac{86}{2}$	M1	
	$= 43$ km/hr	A1 A1 **units**	4
15	**(a)** 78	A1	
	(b) 3.25	A1	
	(c) 390	A1	3
16	**(a)** Correct reflection	MA2	
	(b) Translation $\begin{pmatrix}-8\\-5\end{pmatrix}$	A1 A1	4

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			AVAILABLE MARKS
17	It cannot be spinner W or Z because W doesn't have a 3 and Z doesn't have a 2. It can't be spinner X because the tallies would have to add to give 20. Therefore it must be spinner Y. (Not all the above points are needed for a full answer)	A1 C2	3
18	bisector	M1 A1	2
		Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2015

Mathematics

Unit T5 Paper 1

(Non-calculator)
Foundation Tier



[GMT51]

GMT51

WEDNESDAY 14 JANUARY 9.15am–10.15am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided. Do not write outside the box, around each page, on blank pages or tracing paper.
Complete in blue or black ink only. **Do not write with a gel pen.**
Answer **all fourteen** 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

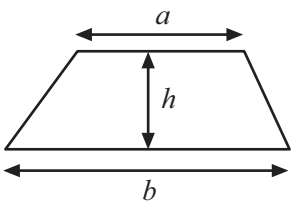
The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **Question 7(b)**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

9314

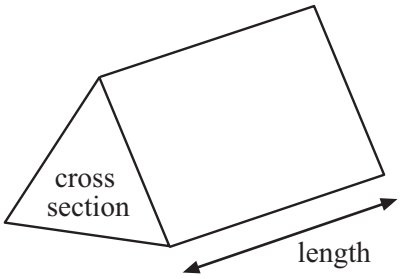
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Formula Sheet

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



Volume of prism = area of cross section × length



9314

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1

impossible **unlikely** **evens** **likely** **certain**

(a) From the list of words given above write the best word to describe the chance of these events.

(i) Next week will have 7 days. _____ [1]

(ii) You will meet the President of the United States of America.

_____ [1]

(b) Write down an event for which the chance is evens.

_____

_____ [1]

2 A rule to convert miles to kilometres is

Number of kilometres = 8 × number of miles ÷ 5

(a) Liam lives 10 miles from Jack.

How far is this in kilometres?

Answer _____ km [2]

(b) Sandi lives 40 km from Jenny.

How far is this in miles?

Answer _____ miles [2]

[Turn over

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3 **(a)** There are 6 eggs in each egg box.

Estimate the total number of boxes needed to pack 297 eggs.

Answer _____ [2]

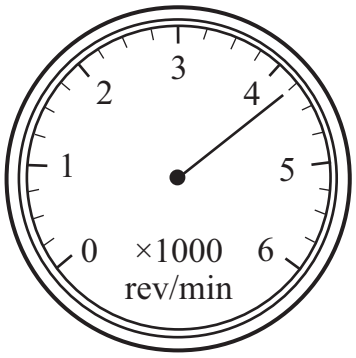
(b) Tommy earns £6.15 per hour.

Estimate his earnings for 39 hours.

Answer £ _____ [2]

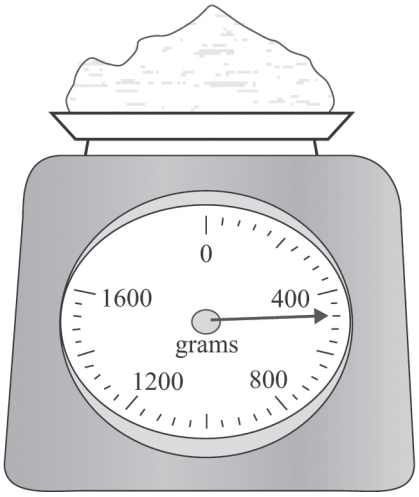
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4 **(a)** The engine speed of a car is measured in revolutions per minute (rev/min).
Write down the **real** engine speed.



Answer _____ rev/min [2]

(b) A recipe uses 10 ounces of flour to make 12 buns.
Joanne is baking 24 buns.
Joanne has some flour on the scales.
How much **more** flour does she need?
(1 ounce = 25 grams)
Show all your work clearly.

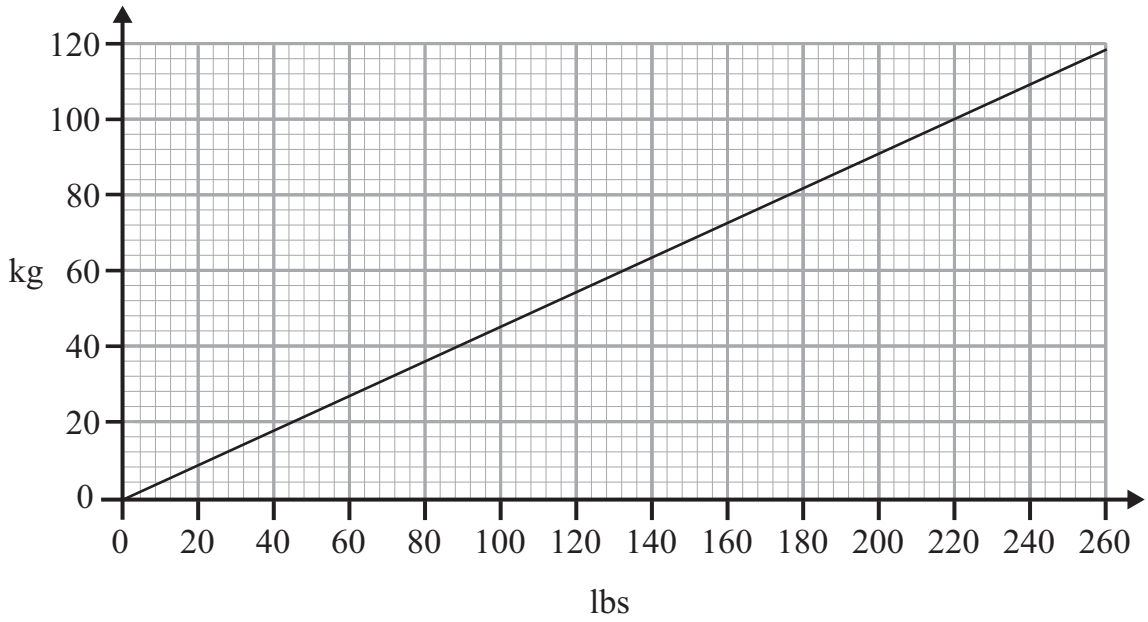


Answer _____ g [4]

[Turn over

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5 This graph can be used to convert pounds (lbs) to kilograms (kg).



(a) The average weight of an American Football player is 248 lbs.

How many kilograms is this?

Answer _____ [1]

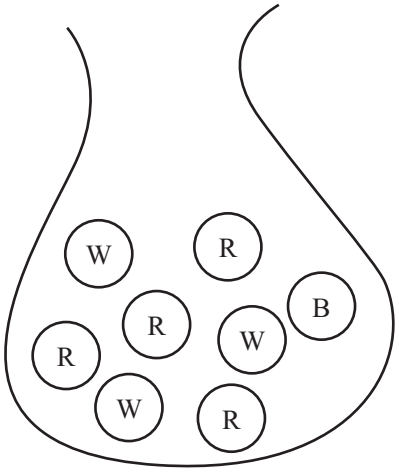
(b) Justin weighs 72 kg. His American cousin Leroy weighs 165 lbs.
Justin says he weighs more than Leroy.
Is he correct? Explain your answer.

Answer _____ because _____

_____ [2]

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6 A bag contains 1 black, 4 red and 3 white counters.

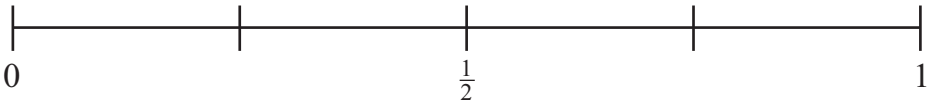


B = black
R = red
W = white

(a) Emma takes a counter at random from the bag.
On the scale below:

(i) mark with an arrow and the letter G, the probability that the counter taken is green, [1]

(ii) mark with an arrow and the letter T, the probability that the counter taken is red or white. [2]



(b) Emma replaces the counter in the bag. A number of pink counters are added to the bag. A counter is now taken at random from the bag. The probability that it is red is now $\frac{1}{5}$.
How many pink counters were added to the bag?

Answer _____ [2]

[Turn over

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7 Kelly has the following coins in her purse:

one £1 coin
three 50 pence coins
three 20 pence coins
four 10 pence coins

(a) She buys sweets costing £2.24

How much has she left in her purse after paying for the sweets, using the coins?

Answer £ _____ [2]

Quality of written communication will be assessed in this part of the question.

(b) Kelly wants to have the **least** number of coins in her purse after receiving her change. How should she pay for her sweets and how many coins will she have left?

Show clearly all your working.

[3]

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8 **(a)** Estimate $\sqrt{34}$

Answer _____ [1]

(b) Mel says that every number has a reciprocal.

Give the counter example to show that Mel is wrong.

Answer _____ [1]

(c) Round 53.0387 to 2 decimal places.

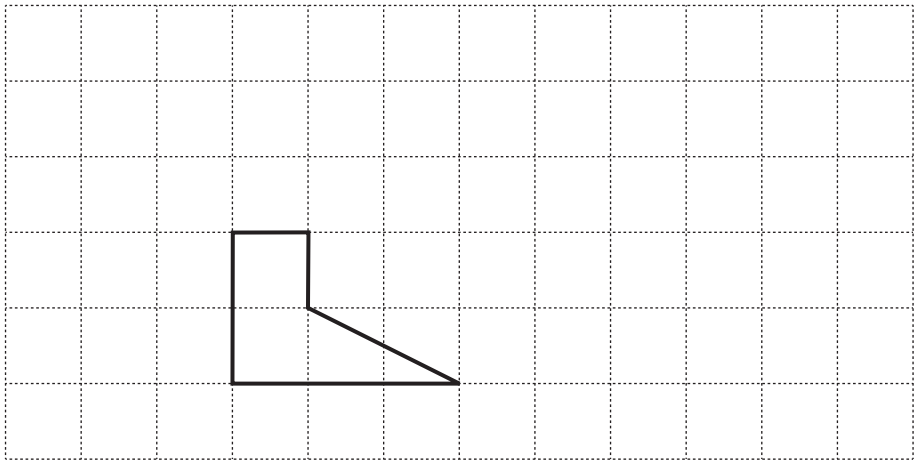
Answer _____ [1]

[Turn over

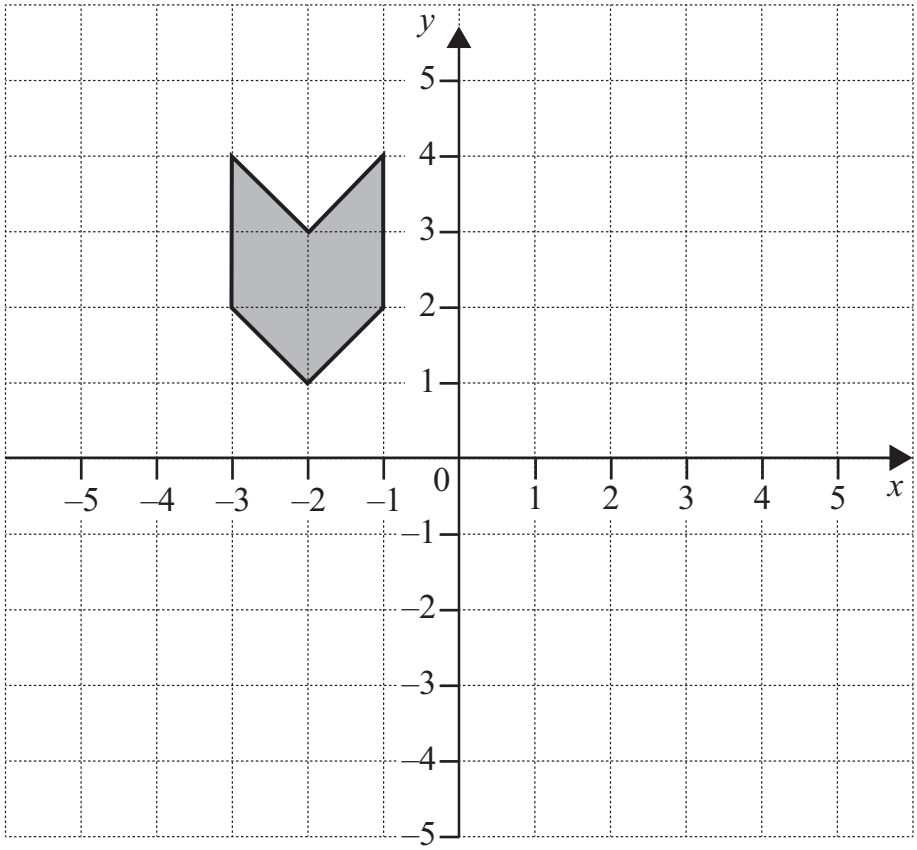


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9 **(a)** Enlarge the shape by scale factor 2 [2]



(b) Reflect the shaded shape in the y axis. [1]



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10 Draw an arrow linking each term on the left with a correct example on the right.

	$3x + 2y$
EQUATION	
	$T = 2P + Q$
EXPRESSION	
	$2(x + 3) \leqslant 6$
FORMULA	
	$x + 3 = 12$

[3]

11 A lorry travels 240 km in 150 minutes.

Calculate the average speed of the lorry in km/hr.

Answer _____ km/hr [3]

[Turn over

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12 A ball is dropped from a height h metres.

Its speed V, in metres per second, can be calculated using the formula:

$V = \sqrt{2gh}$

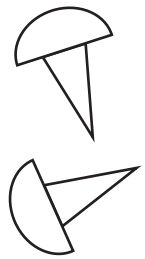
Find the value of V when $g = 10$ and $h = 20$

Answer V = _____ m/s [3]

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13 Marcus wants to investigate the likelihood of a drawing pin landing point up or point down when dropped.
He drops a drawing pin a number of times. His results are shown in the table.

up
up
down
up
up
down
up
down



(a) What is the relative frequency of the drawing pin landing point up?

Answer _____ [1]

(b) Marcus concludes that a drawing pin is more likely to land point up.
Comment on his conclusion.

_____

_____ [1]

[Turn over

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14 List the values of the integer n which satisfy the inequality

$-7 < 3n \leqslant 6$

Answer _____ [3]

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Question Number	**Marks**
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Total Marks	

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Rewarding Learning

General Certificate of Secondary Education
January 2015

Mathematics

Unit T5 Paper 1
(Non-calculator)
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[GMT51]

WEDNESDAY 14 JANUARY

9.15 am–10.15 am

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(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.

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

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

Quality of written communication

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

In particular, candidates must:

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

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

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

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

				AVAILABLE MARKS
1	**(a)**	**(i)** Certain	A1	
		(ii) Unlikely	A1	
	(b)	Valid example – getting a head when a fair coin is tossed, getting a red from a pack of cards, getting an odd number when a fair dice is thrown, baby is a boy, etc.	A1	3
2	**(a)**	$8 \times 10 \div 5 = 16$	M1 A1	
	(b)	$40 \times 5 \div 8 = 25$	M1 A1	4
3	**(a)**	$\frac{300}{6} = 50$	M1 A1	
	(b)	$6 \times 40 = £240$	M1 A1	4
4	**(a)**	4.25 read	A1	
		$\times 1000 = 4250$	MA1	
	(b)	24 buns = 20 ounces	MA1	
		20 ounces = 500g	MA1	
		scales reading 480g	A1	
		500 – 480 = 20g	MA1	6
5	**(a)**	248 lbs ≈ 112 kg	A1	
	(b)	No because 72 kg ≈ 160 lbs or 165 lbs ≈ 75 kg	A1 MA1	3
6	**(a)**	**(i)** G at zero	A1	
		(ii) $\frac{7}{8}$ written	MA1	
		T correctly positioned at $\frac{7}{8}$ on scale	A1	
	(b)	4 reds = $\frac{1}{5}$, so 20 counters	MA1	
		12 pink counters	MA1	5
7	**(a)**	£3.50 – £2.24 = £1.26	M1 A1	
	(b)	Pays with 3 50s, 2 20s and 4 10s	C1	
		Receives a 5p coin and a 1p coin	C1	
		Smallest number of coins left is 4	C1	5

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				AVAILABLE MARKS
8	**(a)**	Allow 5.7–5.9	A1	
	(b)	0 does not have a reciprocal	A1	
	(c)	53.04	A1	3
9	**(a)**	5 sides correct (3 sides correct – A1)	MA2	
	(b)	correct reflection	A1	3
10		Equation $x + 3 = 12$	A1	
		Expression $3x + 2y$	A1	
		Formula T = 2P + Q	A1	3
11		150 (mins) = $2\frac{1}{2}$ (hours)	A1	
		$240 \div 2\frac{1}{2} = 240 \times \frac{2}{5}$	M1	
		= 96 km/hr	A1	3
		alternatively		
		240 km = 150 mins (÷5)	MA1	
		48 km = 30 mins (× 2)	MA1	
		96 km = 60 mins (96 km/hr)	A1	
12		$V = \sqrt{2 \times 10 \times 20}$	M1	
		$= \sqrt{400} \quad = 20$	A1 A1	3
13	**(a)**	$\frac{5}{8}$	A1	
	(b)	Not a valid conclusion as he has not made enough trials to support this	A1	2
14		$-\frac{7}{3} < n \leqslant 2$	MA1	
		–2, –1, 0, 1, 2	MA2	3
			Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2014

Mathematics

Unit T5 Paper 1

(Non-calculator) Foundation Tier



[GMT51]

GMT51

WEDNESDAY 15 JANUARY 9.15am-10.15am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided. Do not write outside the box, around each page, on blank pages or tracing paper.
Complete in blue or black ink only. **Do not write with a gel pen.**
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.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **question 11**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

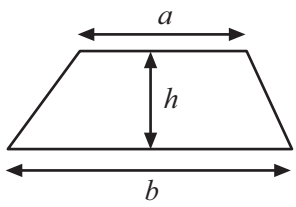
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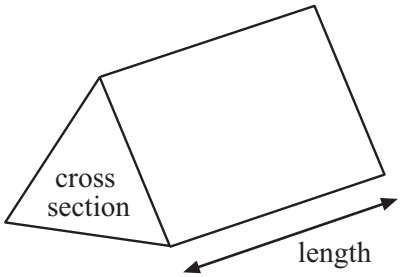
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Formula Sheet

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



Volume of prism = area of cross section × length



8694

1 **(a)** **Estimate** 108×7.8

Answer _____ [2]

(b) **Estimate** how many books costing £7.95 each can be bought with £48

Answer _____ [2]

(c) **Estimate** $\sqrt{75}$

Answer _____ [1]

(d) Write 4387 correct to the nearest 100

Answer _____ [1]

(e) Round 19.0396

(i) to two decimal places,

Answer _____ [1]

(ii) to three decimal places.

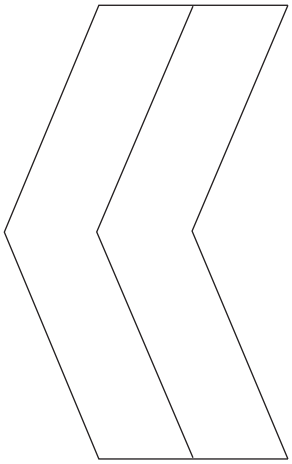
Answer _____ [1]

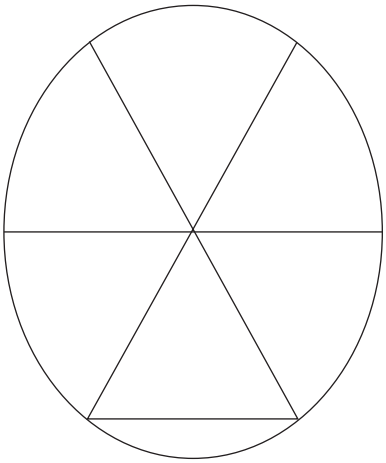
Examiner Only	
Marks	Remark
Total Question 1	

[Turn over

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2 Draw a line of symmetry on each shape below.





[2]

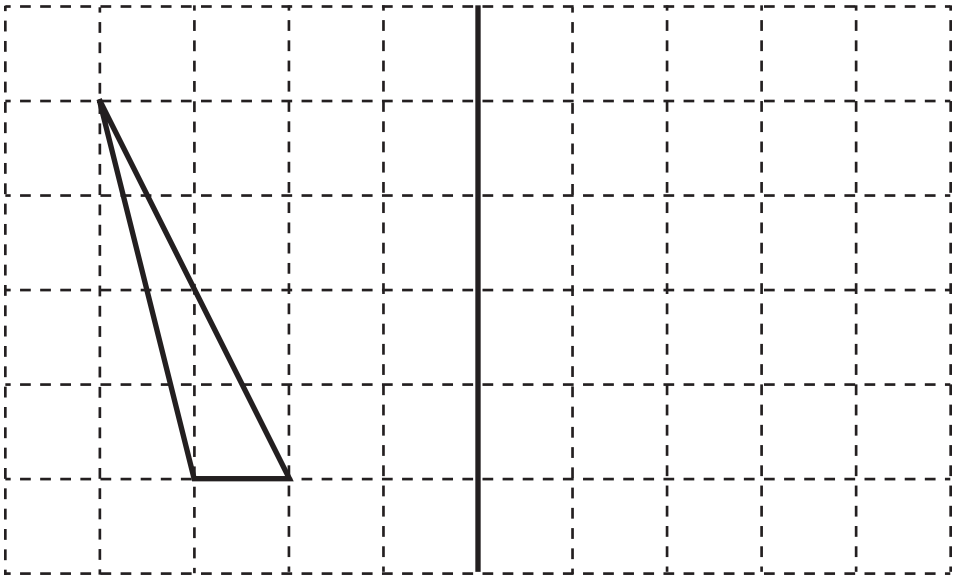
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Total Question 2	

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3 Draw the reflection in the mirror line of each of the given shapes.

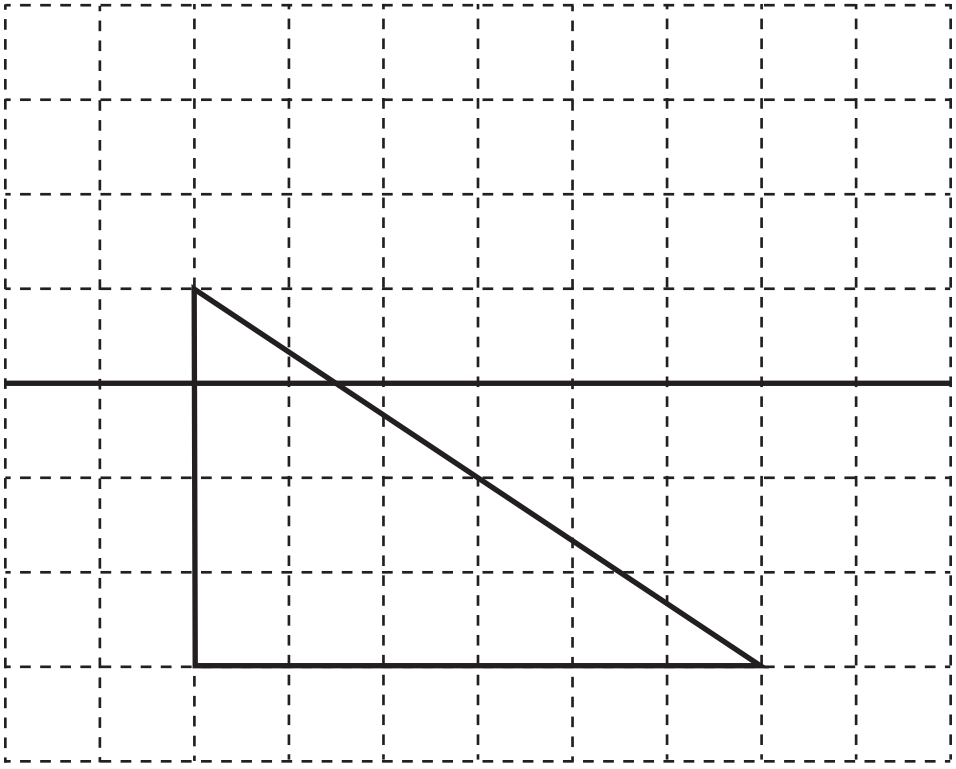
Examiner Only	
Marks	Remark

(a)



[2]

(b)



[2]

Total Question 3	

[Turn over

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4 Molly works out that the telephone calls to her house are:

72% for her mother 15% for her father
12% for Molly 1% for her brother

unlikely	**certain**	**impossible**
	evens	**likely**

From the list of words given above, write the most appropriate word to describe the probability that the next telephone call to her house is for

(a) Molly Answer _____ [1]

(b) her mother Answer _____ [1]

(c) her aunt Answer _____ [1]

Examiner Only

Marks	Remark

Total Question 4

5 Andy makes visits to schools using his own car.
His daily pay is calculated using the following formula.

Daily pay = £120 + number of miles travelled × rate per mile

The rate per mile is £0.50
One day he travelled a total of 48 miles.
Work out his pay for that day.

Answer £ _____ [2]

Total Question 5

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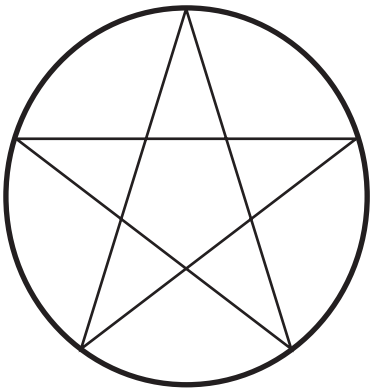
6 Calculate the value of $24 - 3 \times 2$

Answer _____ [1]

Examiner Only	
Marks	Remark

Total Question 6

7 **(a)** **(i)**

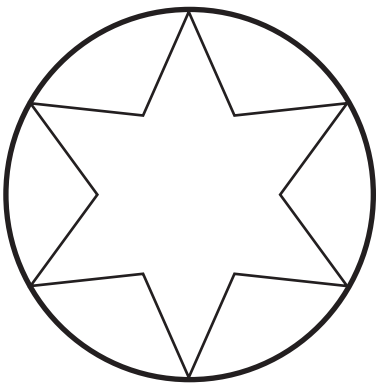


What is the order of rotational symmetry of the shape above?

Answer _____ [1]

(ii) Draw **all** the lines of symmetry on the shape **above**. [2]

(b) Mark with X the centre of rotational symmetry on the shape below.



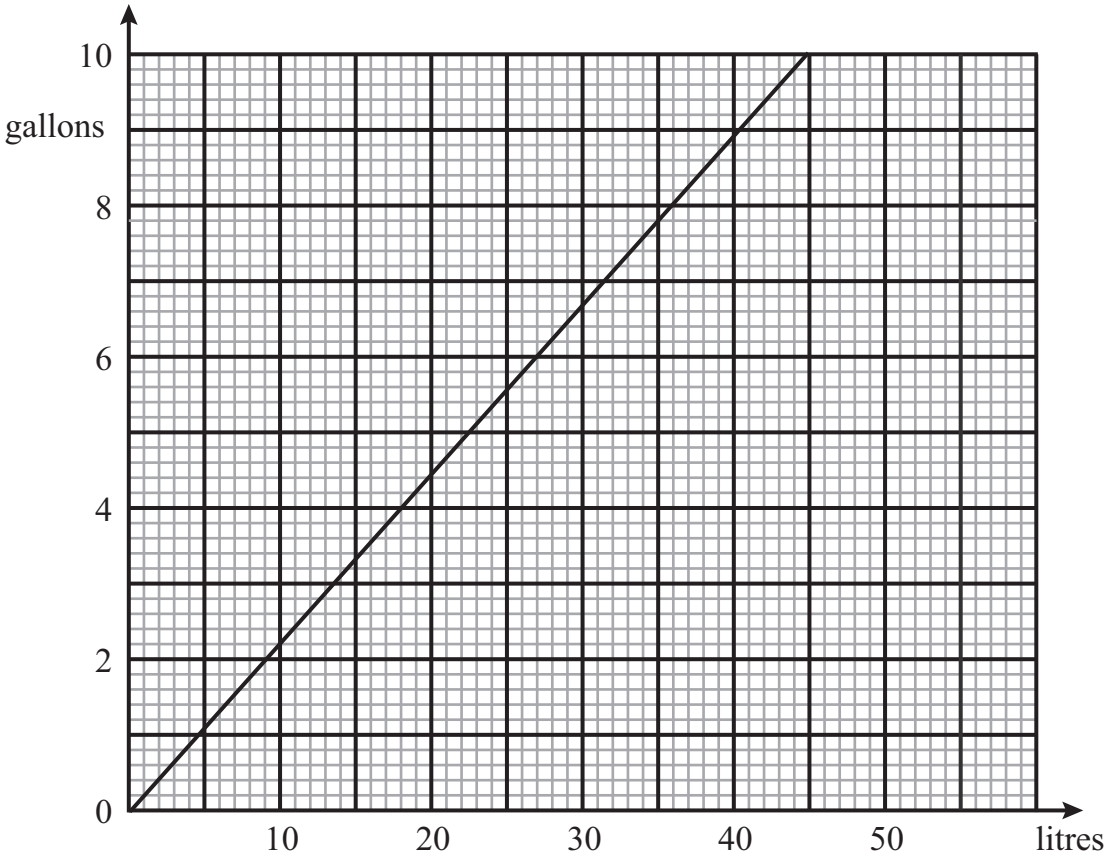
[1]

Total Question 7

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16GMT5107

8 The graph below can be used to convert between litres and gallons.

Examiner Only	
Marks	Remark



Use the graph to work out

(a) the number of litres which are equivalent to 8 gallons,

Answer _____ litres [1]

(b) the number of gallons which are equivalent to 25 litres.

Answer _____ gallons [1]

Total Question 8

9 Work out the value of $p - 2q - 3r$ when $p = 5$, $q = 3$ and $r = 4$

Answer _____ [2]

Total Question 9

8694

10 Each letter of the alphabet is written on a tile. The 26 tiles are placed in a bag.
One tile is chosen at random from the bag.
Write down the probability that the letter on the tile is

(a) Q,

Answer _____ [1]

(b) a letter from the word MATHEMATICS.

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 10	

Quality of written communication will be assessed in this question.

11 Peter says,

"When you add any two prime numbers together you **always** get an even number as the answer."

Show, using an example, that Peter is not correct.

[2]

Total Question 11	

12 Write down how many significant figures there are in

(a) 603.9

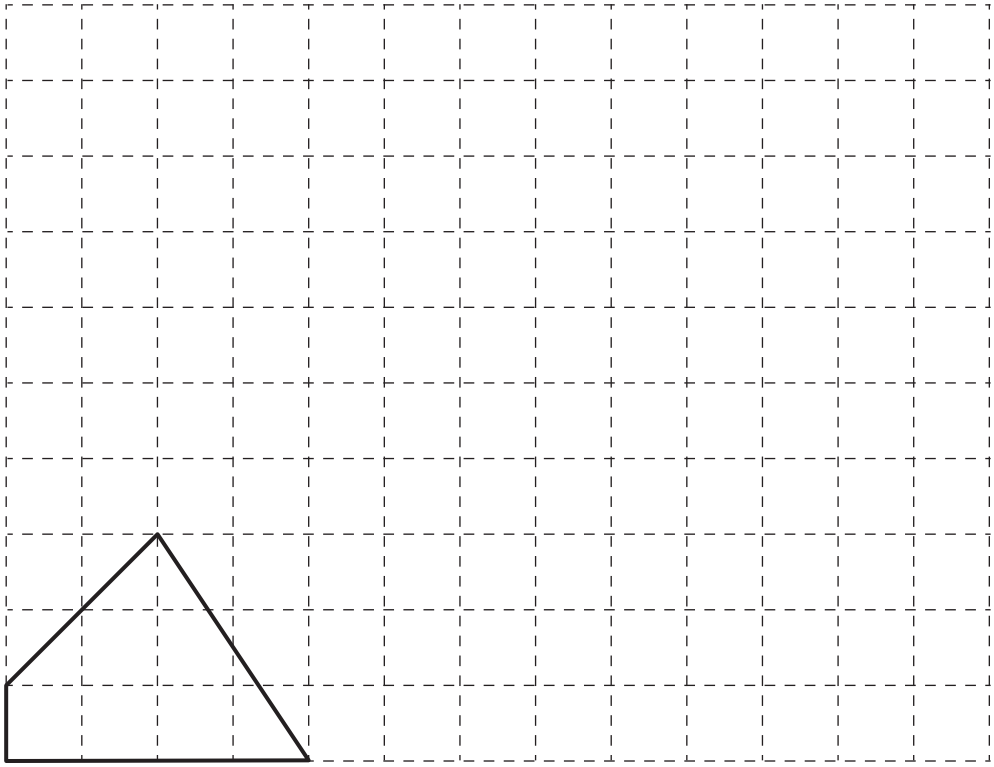
Answer _____ [1]

(b) 0.00067

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 12	

13 Enlarge the shape below by scale factor 3



[2]

Total Question 13	

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14 In planning a school trip Mr Davison uses the following information.

For every 20 pupils you will need

16 bottles of milk
24 rounds of sandwiches
10 bars of chocolate

Complete the following for 50 pupils on a school trip.

_____ bottles of milk

_____ rounds of sandwiches

_____ bars of chocolate [3]

Examiner Only	
Marks	Remark
Total Question 14	

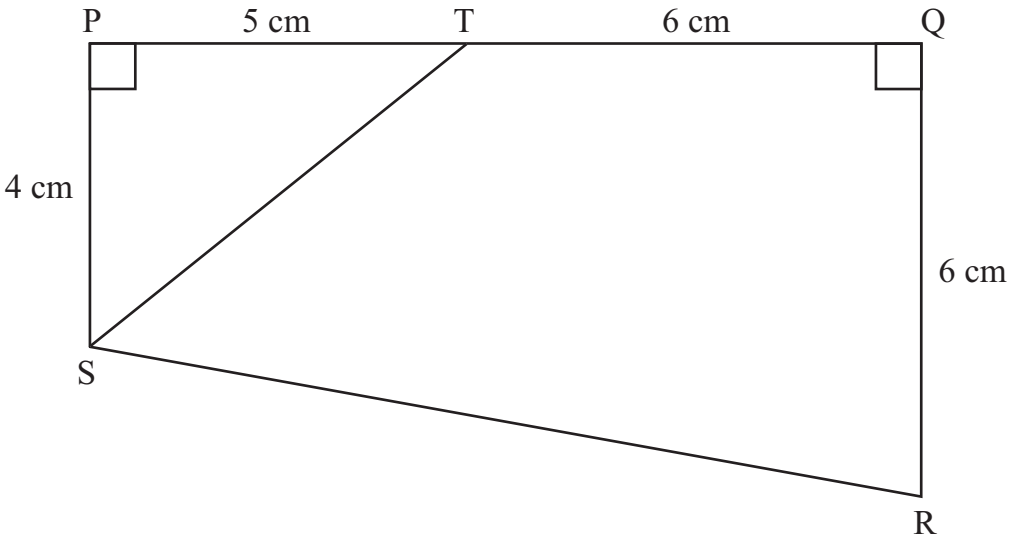
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16GMT5111

15 PQRS is a trapezium. PS and QR are perpendicular to the line PQ.

PT = 5 cm, TQ = 6 cm, PS = 4 cm and QR = 6 cm.

Diagram not drawn accurately



Find the area of the

(a) trapezium PQRS,

Answer _____ cm^2 [2]

(b) quadrilateral TQRS.

Answer _____ cm^2 [2]

Examiner Only	
Marks	Remark
Total Question 15	

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16GMT5112

16 Find the reciprocal of 1.2

Answer _____ [2]

Total Question 16

17 Solve the inequality $-2 < 3n \leqslant 12$ where n is an integer.
List all values of n.

Answer _____ [3]

Total Question 17

18 A box contains pens. There are 8 black, 6 blue, 4 green and the rest are red.
The probability of taking a red pen from the box is $\frac{1}{10}$
How many red pens are in the box?

Answer _____ [2]

Total Question 18

Examiner Only

Marks	Remark

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THIS IS THE END OF THE QUESTION PAPER

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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	

Examiner Number

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Rewarding Learning

General Certificate of Secondary Education
January 2014

Mathematics

Unit T5 Paper 1
Foundation Tier

[GMT51]

WEDNESDAY 15 JANUARY

9.15 a.m. – 10.15 a.m.

MARK SCHEME

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Introduction

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

The solution to a question gains marks for correct method and marks for accurate working based on this method. The marks awarded for each question are shown in the right-hand column andthey 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. Accuracy marks may depend on preceding **M** (method) marks, hence **M**0 **A**1 cannot be awarded i.e. where the method is not correct no marks can be given.
MA indicates marks for combined method and accurate working.

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

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

Positive marking

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

Some common examples of this occur in the following cases:

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

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

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

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General Marking Advice

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

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

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

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

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

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

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

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

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				AVAILABLE MARKS
1	**(a)**	(100 × 8) = 800	MA1 A1	
	(b)	(£50 ÷ 8) or (£48 ÷ 8) = 6	M1 A1	
	(c)	8.5 to 8.8	A1	
	(d)	4400	A1	
	(e) **(i)**	19.04	A1	
	(ii)	19.040	A1	8
2		correct lines	A1, A1	2
3	**(a)**	correct reflection 2 vertices correct allow A1 except in the case of a translation	A2	
	(b)	correct reflection	A2	4
4	**(a)**	Unlikely	A1	
	(b)	Likely	A1	
	(c)	Impossible or unlikely	A1	3
5		120 + 48 × 0.5 144	MA1 A1	2
6		(24 – 6 =) 18	MA1	1
7	**(a)** **(i)**	5	A1	
	(ii)	5 correct lines 3 correct lines allow A1	A2	
	(b)	correct centre	A1	4
8	**(a)**	36	A1	
	(b)	5.5 to 5.6	A1	2
9		5 – 6 – 12 – 13	MA1 A1	2

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			AVAILABLE MARKS
10	**(a)** $\frac{1}{26}$	A1	
	(b) $\frac{8}{26}$ (or $\frac{4}{13}$)	MA1	2
11	2 + any other prime	C1	
	which is odd	C1	2
12	**(a)** 4	A1	
	(b) 2	A1	2
13	correct enlargement (allow A1 for 2 sides correct) (allow A1 for correct vertices but no lines)	A2	2
14	Milk = $16 \times \frac{50}{20} = 40$	MA1	
	Sandwiches = $24 \times \frac{50}{20} = 60$	MA1	
	Chocolate = $10 \times \frac{50}{20} = 25$	MA1	3
15	**(a)** $\frac{1}{2}(4 + 6)11$	MA1	
	55	A1	
	(b) $55 - \frac{1}{2}(5 \times 4)$	M1	
	$= 45$	A1	4
16	$\frac{1}{1.2}$	MA1	
	$= \frac{10}{12}\left(\frac{5}{6}\right)$	MA1	2
17	$-\frac{2}{3} < n \leqslant 4$	MA1	
	0, 1, 2, 3, 4 (–1 for each error)	A2	3
18	P (not red) = $\frac{9}{10} = \frac{18}{20}$	MA1	
	2 red pens	MA1	2
		Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2013

Mathematics

Unit T5 Paper 1

(Non-calculator)
Foundation Tier



[GMT51]

GMT51

FRIDAY 14 JUNE 9.15 am–10.15 am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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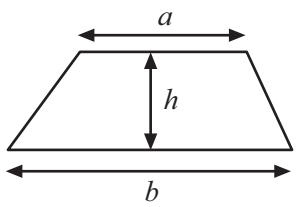
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You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

8169

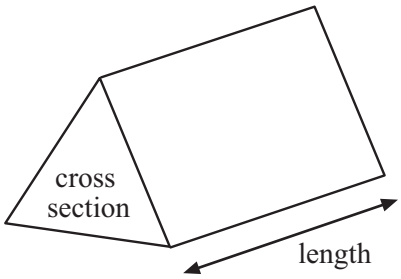
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Formula Sheet

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

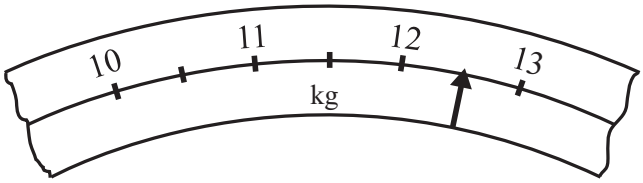


Volume of prism = area of cross section × length

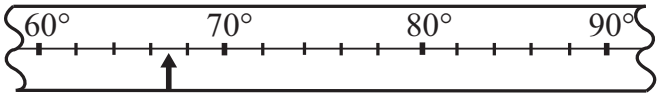


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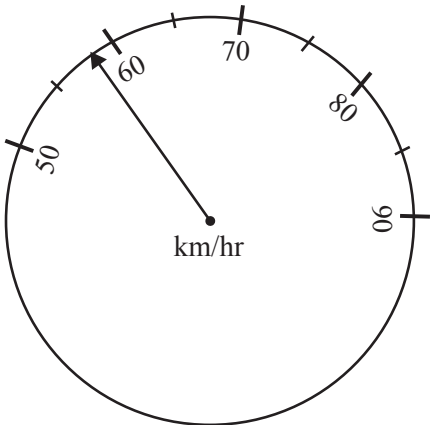
1 **(a)** On each of the following scales give the reading marked by the arrow.



Reading _____ kg [1]



Reading _____ ° [1]



Reading _____ km/hr [1]

(b) On the last diagram above mark clearly with an arrow a speed of 72 km/hr. [1]

Examiner Only	
Marks	Remark
Total Question 1	

[Turn over

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Quality of written communication will be assessed in this question.
Show your working.

Examiner Only	
Marks	Remark

2 **(a)** The desks in an examination hall are arranged in rows.
There are 22 desks in each row and there are 9 rows of desks in the hall.
Estimate the total number of desks in the hall.
You must show how you arrived at your answer.

Answer _____ desks [2]

(b) A book contains 382 pages.
The book is divided into 22 chapters of equal length.
Estimate the number of pages in each chapter.
You must show how you arrived at your answer.

Answer _____ pages [2]

(c) A book of stamps costs £2.76
Estimate how many books of stamps John can buy for £21
You must show how you arrived at your answer.

Answer _____ books of stamps [2]

Total Question 2

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3 Mrs Smith takes her Drama students to the theatre by bus.

The total cost of a trip can be worked out using the formula.

Cost (£) = 5 × Number of students + 80



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(a) How much does it cost to take 16 students to the theatre?

Answer £ _____ [2]

(b) A second trip later in the year cost £125
Find how many students were on the trip this time.

Answer _____ [2]

(c) Explain what you think the 80 in the formula represents.

_____

_____ [1]

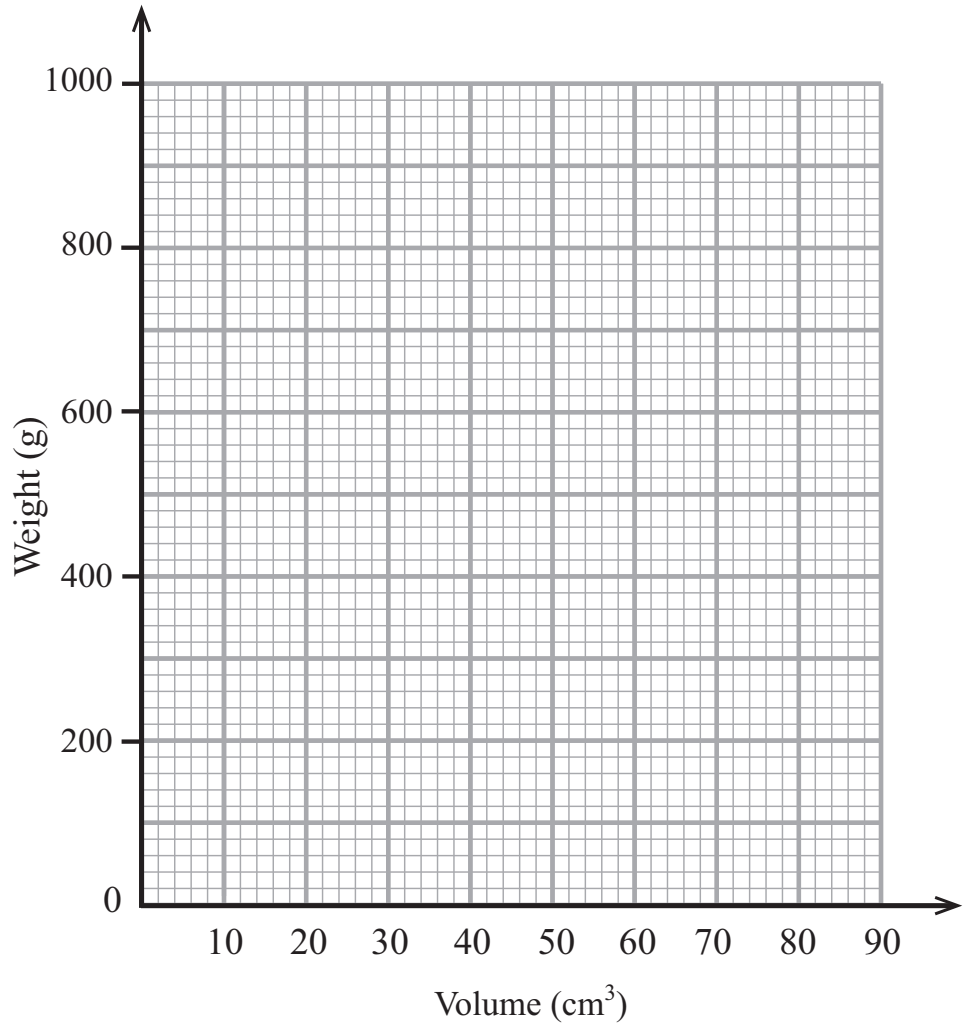
Examiner Only	
Marks	Remark
Total Question 3	

[Turn over

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4 The volumes and weights of bars of gold are recorded in a table.

Volume (cm^3)	10	25	35	50
Weight (g)	180	450	630	900



(a) Plot the points and draw a conversion graph. [3]

(b) Susan has a gold bar with a volume of 20 cm^3.

What is the value of her gold bar if 1 g is worth £20?

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 4	

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5 **(a)** Estimate the value of $\sqrt{17} + \sqrt{83}$

You must show how you arrived at your answer.

Answer _____ [2]

(b) Calculate the value of

(i) $5 \times 4 + 6 \times 2$

Answer _____ [1]

(ii) $30 \div 6 + 4$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 5	

[Turn over

6 A spinner is spun and a fair coin is tossed.
The spinner has equally likely outcomes of 1, 2 or 3
One of the outcomes can be recorded as (1, H) for 1 and heads.

(a) List all the other possible outcomes.

[2]

(b) What is the probability of getting an even number on the spinner and tails on the coin?

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 6	

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7 Circle TRUE or FALSE for each of the following statements:

(a) Some triangles have no lines of symmetry — TRUE FALSE

(b) Some triangles have exactly one line of symmetry — TRUE FALSE

(c) Some triangles have exactly two lines of symmetry — TRUE FALSE

(d) Some triangles have exactly three lines of symmetry — TRUE FALSE

(e) Some triangles have more than three lines of symmetry — TRUE FALSE

[3]

Examiner Only

Marks	Remark

Total Question 7

8 A rectangle has a length of 12 cm and a width of 20 cm.
The rectangle is enlarged by a scale factor of 4
Write down the new length and width of the rectangle.

Answer length _____ cm

width _____ cm

[2]

Total Question 8

[Turn over

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9 Dan's telephone and broadband usage for a month amounts to £40
To calculate his bill VAT at 20% must be added to his usage costs.
Work out Dan's bill for the month.

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 9	

10 Given that $76 \times 219 = 16644$ work out the value of

(a) $16644 \div 21.9$

Answer _____ [1]

(b) 75×219

Answer _____ [1]

Total Question 10	

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11 A fair red dice has faces marked 1, 2, 3, 4, 5, 6
A fair blue dice has faces marked 1, 1, 3, 3, 6, 7

The table below shows all possible outcomes when the dice are thrown together.

Red Dice

Blue Dice	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)
7	(7, 1)	(7, 2)	(7, 3)	(7, 4)	(7, 5)	(7, 6)

(a) Calculate the probability of getting a total score of 13 on the two dice.

Answer _____ [1]

(b) Calculate the probability of getting a larger score on the blue dice than on the red dice.

Answer _____ [1]

(c) If the two dice are thrown together 360 times how many times would you expect to get a **total** score of 6?

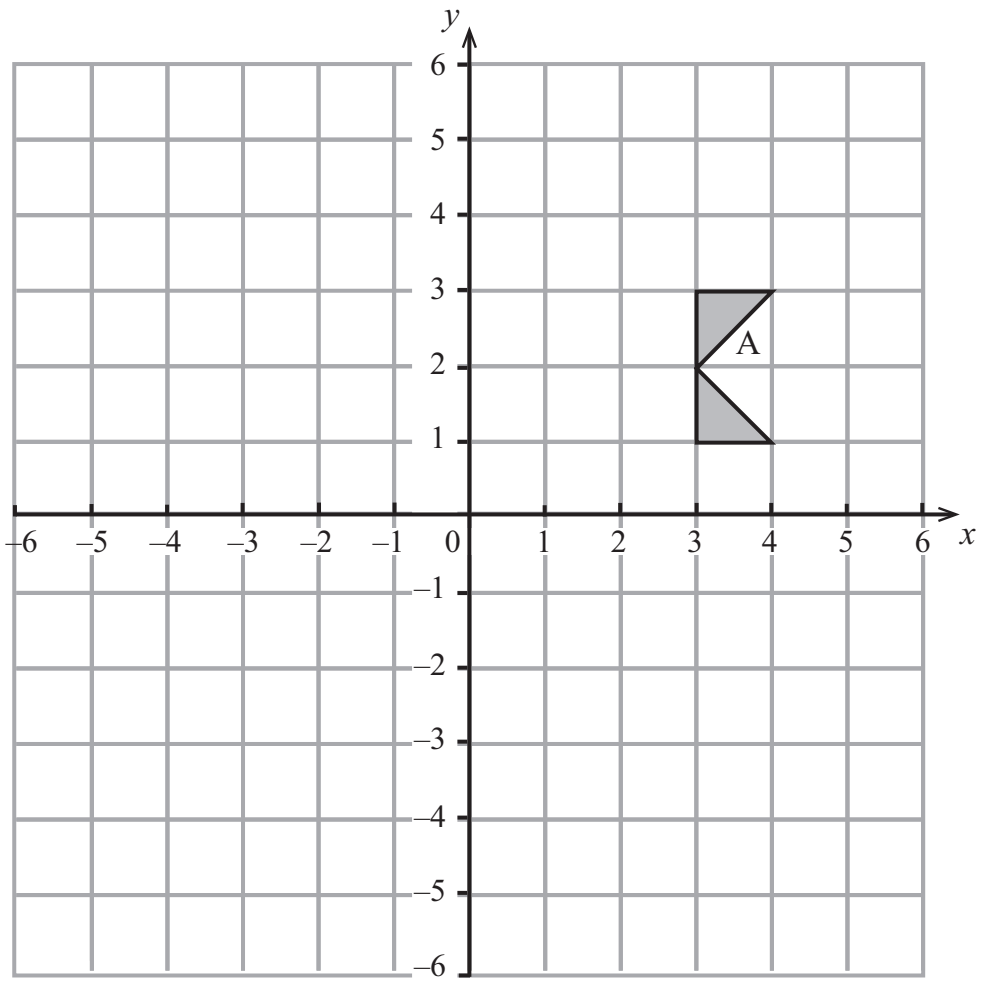
Answer _____ [2]

Examiner Only

Marks	Remark
Total Question 11	

[Turn over

12



(a) Reflect the shape A in the diagram in the line $x = 2$
Label the new shape B. [2]

(b) Rotate the shape A through 90° anticlockwise about the point (0, –2)
Label the new shape C. [2]

Examiner Only	
Marks	Remark
Total Question 12	

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13 John discovered that the probability that a girl has blue eyes is 0.6

(a) What is the probability that a girl does **not** have blue eyes?

Answer _____ [1]

John asks 20 girls their eye colour. He writes some probabilities in the following table.

Colour of eyes	Brown	Green	Blue	Other
Probability	0.35	0.05		0.05

(b) Complete John's table. [2]

(c) Why do you think that John's calculated probability for blue eyes is not 0.6?

_____

_____ [1]

Examiner Only	
Marks	Remark
Total Question 13	

[Turn over

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14 Work out the reciprocal of 1.8

Examiner Only	
Marks	Remark

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

Total Question 14	

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Question Number	**Marks**
1	
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10	
11	
12	
13	
14	
Total Marks	

Examiner Number

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Rewarding Learning

General Certificate of Secondary Education
2013

Mathematics

Unit T5 Paper 1
Foundation Tier

[GMT51]

FRIDAY 14 JUNE

9.15 a.m. – 10.15 a.m.

MARK SCHEME

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GCSE MATHEMATICS

Introduction

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

The solution to a question gains marks for correct method and marks for accurate working based on this method. The marks awarded for each question are shown in the right-hand column andthey 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. Accuracy marks may depend on preceding **M** (method) marks, hence **M**0 **A**1 cannot be awarded i.e. where the method is not correct no marks can be given.
MA indicates marks for combined method and accurate working.
C indicates marks for quality of written communication.
oe indicates "or equivalent" i.e. where a solution can be expressed in an alternative correct form, e.g. $\frac{1}{4} = 0.25$
ft indicates "follow through". See explanation below.

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

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

Positive marking

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

Some common examples of this occur in the following cases:

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

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

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

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General Marking Advice

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

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

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

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

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

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

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

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

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

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

(xi) Incorrect money notation will generally lose one mark but will be penalised only once per paper.

(xii) In general, a tolerance of ±2° is allowed in drawing angles, and ±2 mm in measuring length.

(xiii) In algebra, if further inaccurate work is done to a correct answer, some marks may be lost.

Quality of written communication

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

In particular, candidates must:

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

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

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

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

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				AVAILABLE MARKS
1	**(a)**	12.4 – 12.6	A1	
		67° (±0.5)	A1	
		57 – 59	A1	
	(b)	Arrow correctly marked between 71 and 74	A1	4
2	**(a)**	Note: Attempts to calculate with given figures – no marks.		
		20 × 10 **or** 22 × 10 **or** 20 × 9	C1	
		200 **or** 220 **or** 180	A1	
	(b)	400 ÷ 20 **or** 380 ÷ 20	C1	
		20 19	A1	
	(c)	21 ÷ 3 **or** 20 ÷ 3 **or** 3 × 7 = 21 **or** 3 seen with repeated addition	C1	
		7 7 7 7	A1	6
		NB: Correct answer without work gets no marks		
		NB: Any attempt to 'calculate' gets no marks		
3	**(a)**	5 × 16 + 80	M1	
		160	A1	
	(b)	125 = 5 × number of students + 80 **or** 5 × number of students = 45	M1	
		9	A1	
	(c)	Cost of the bus hire **or** fixed charge **or** travelling costs		
		or food and/or drink/refreshments/fuel	A1	5
4	**(a)**	4 points correctly plotted	A2	
		(At least 2 points correctly plotted, A1)		
		Correct straight line drawn	A1	
	(b)	(Reading from the graph for) 20 cm^3 ≈ 360 g	MA1	
		"360" × 20 = "7200" **ft**	A1	5
5	**(a)**	4 and 9	MA1	
		13	A1	
	(b)	**(i)** 32	A1	
		(ii) 9	A1	4
6	**(a)**	(2, H) (3, H) (1, T) (2, T) (3, T)	A2	
		(4 correct answers, A1)		
	(b)	$\frac{1}{6}$	A1	3

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				AVAILABLE MARKS
7	**(a)** TRUE			
	(b) TRUE			
	(c) FALSE			
	(d) TRUE			
	(e) FALSE	A3 for 5 correct A2 for 4 correct A1 for 2 correct		3
8	48 cm		A1	
	80 cm		A1	2
9	40×0.2 **or** equivalent **or** 8		MA1	
	£48		A1	2
10	**(a)** 760		A1	
	(b) 16425		A1	2
11	**(a)** $\frac{1}{36}$		A1	
	(b) $\frac{15}{36}$		A1	
	(c) $\frac{4}{36} \times 360$ **or** equivalent		MA1	
	$= 40$			
	NB: $\frac{40}{360}$ in answer with no work earns 1 mark		A1	4
12	**(a)** Correct reflection (Correct reflection in any other vertical line, A1)		A2	
	(b) Correct rotation (Correct rotation about wrong centre or 90° clockwise rotation about (0, –2), A1)		A2	4
13	**(a)** 0.4		A1	
	(b) $1 - [0.35 + 0.05 + 0.05]$ **oe**		M1	
	0.55		A1	
	(c) only used 20 people, too small sample		A1	4
14	$\frac{1}{1.8}$		A1	
	$\frac{10}{18}\left(\frac{5}{9}\right)$		A1	2
			Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2013

Mathematics

Unit T5 Paper 1

(Non-calculator)
Foundation Tier



[GMT51]

GMT51

TUESDAY 15 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.
You must answer the questions in the spaces provided. Do not write outside the box, around each page, on blank pages or tracing paper.
Complete in blue or black ink only. **Do not write in pencil or with a gel pen.**
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

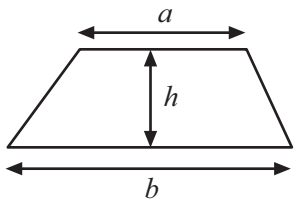
The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **question 1**
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

8125

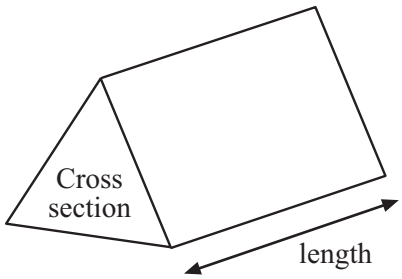
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Formula Sheet

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



Volume of prism = area of cross section × length



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1 **Quality of written communication will be assessed in this question.**
Show your working.

Aaron and Bob bought new beds in two different shops.

Aaron paid £220 deposit and £30 per month for 8 months.

Bob made one payment of £500.

Who paid less for the bed and how much less did they pay?

Answer _____ paid £ _____ less [4]

Examiner Only	
Marks	Remark
Total Question 1	

[Turn over

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2 In a school Superleague, points are awarded using the formula:
Number of Points = 4 × games won + 2 × games drawn – 1 × games lost

Year 8, 9 and 10 **each play 10 matches**.

(a) Year 8 won 6 games, drew 2 and lost 2. How many points were awarded?

Answer _____ [2]

(b) Year 10 won 3 games, drew 6 and lost 1. How many points were awarded?

Answer _____ [1]

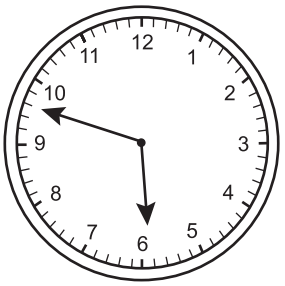
(c) Year 9 won 4 games but finished with 28 points.
How many games did they draw?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 2	

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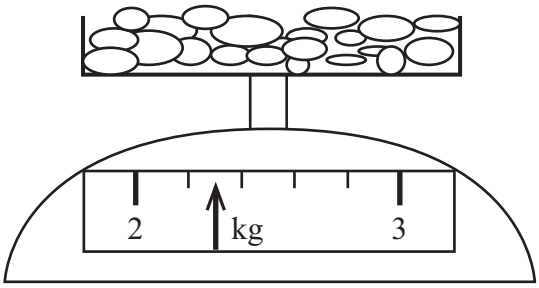
3 **(a)** Karen woke up early one morning. What time was it on her clock?



Answer _____ [2]

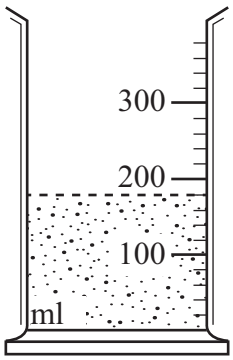
(b) Write down the reading on each of these scales.

(i)



Answer _____ kg [1]

(ii)



Answer _____ ml [1]

Examiner Only	
Marks	Remark
Total Question 3	

[Turn over

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4 **(a)** **Estimate** the total length of 53 buses whose average length is 8.7 metres.

Answer _____ m [2]

(b) **Estimate** how many books costing £7.95 each could be bought for £74.

Answer _____ books [2]

(c) **Estimate** the area of a rectangular garden with length 29.6 metres and breadth 8.7 metres.

Answer _____ m^2 [2]

(d) **Estimate** $\sqrt{47}$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 4	

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5 Calculate

Examiner Only	
Marks	Remark

(a) $7 + 8 \div 2$

Answer _____ [1]

(b) $9 + 4(7 - 2)$

Answer _____ [1]

(c) $6 \times 3 + 15 \div 3$

Answer _____ [1]

Total Question 5

[Turn over

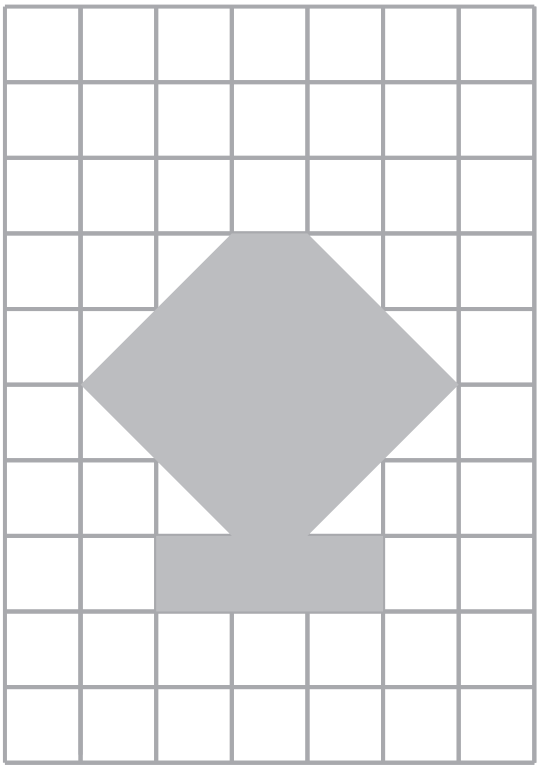
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6 **(a)** How many lines of symmetry **in total** are there in the letters below?

M A T H

Answer _____ [2]

(b) Shade 3 squares to make a shape which has **two lines** of symmetry.



[1]

Examiner Only	
Marks	Remark
Total Question 6	

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7 There are **ten** beads in a bag.

2 are red, 2 are blue and the rest are yellow.

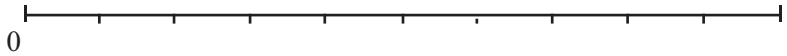
A bead is taken at random from the bag.

Mark the probability of each of the following events happening on the probability scale below using the capital letters.

R The bead taken is red

Y The bead taken is yellow

B The bead taken is black



[3]

Examiner Only

Marks	Remark

Total Question 7

8 Write down the reciprocal of 7

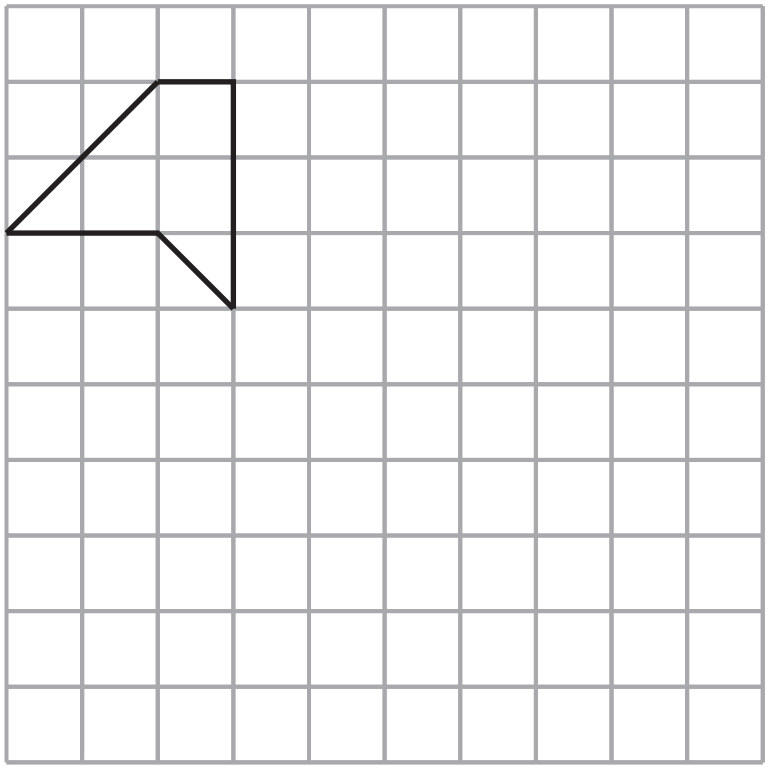
Answer _____ [1]

Total Question 8

[Turn over

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9 Enlarge the shape below using a scale factor of 2



[2]

Examiner Only	
Marks	Remark
Total Question 9	

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10 A spinner with equal sized sections is numbered

2, 3, 4 and 6

The spinner is spun twice.

The numbers the spinner points to are **added** together to give a total score.

(a) Complete the table to show all the possible total scores.

+	2	3	4	6
2				
3				
4				
6				

[2]

(b) Write down the probability that the total score is **more than 8**

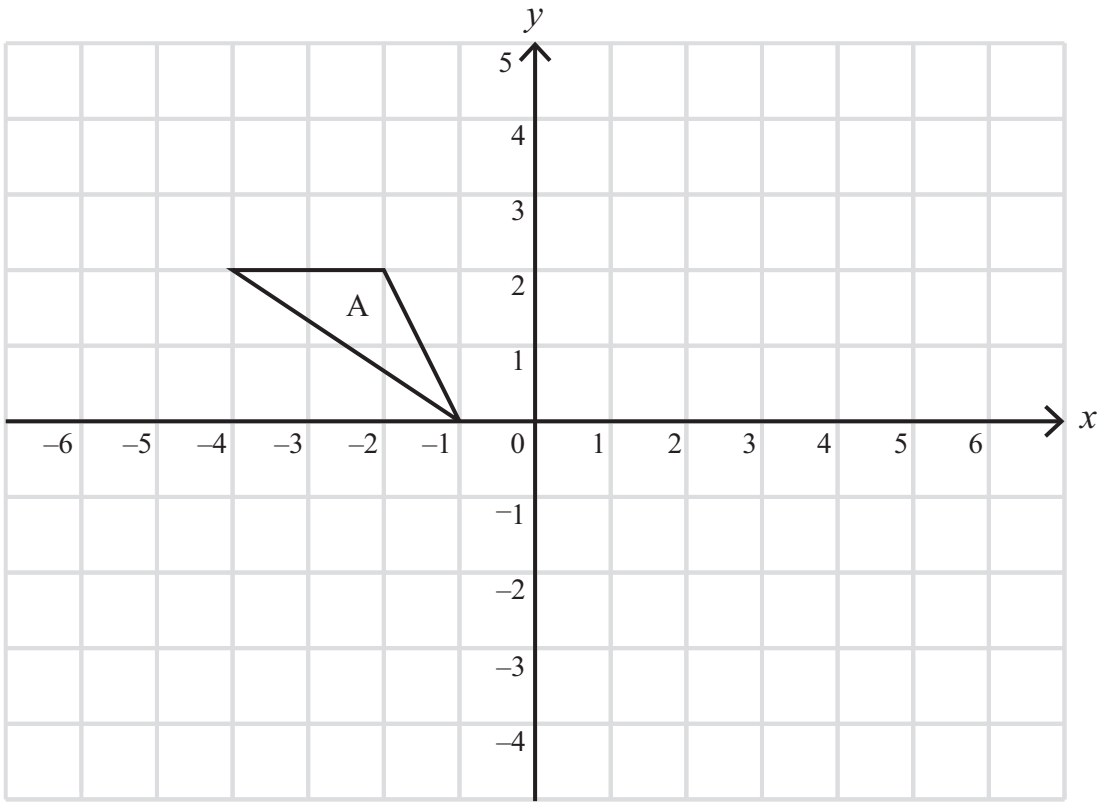
Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 10	

[Turn over

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11 **(a)** Reflect triangle A in the line $x = 1$



[2]

(b) Translate triangle A by $\begin{pmatrix} 3 \\ -5 \end{pmatrix}$. [2]

Examiner Only

Marks	Remark

Total Question 11

12 $W = \dfrac{Y(X - 2)}{4}$

Find the value of W when X = 8 and Y = –2

Answer W = _____ [3]

Total Question 12

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13 Simplify $(p^4)^2$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 13	

14 **Estimate** $\dfrac{703 \times 3.82}{0.91 - 0.69}$

Answer _____ [3]

Total Question 14

[Turn over

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15 Helen runs up a hill at 4 km per hour.

It takes her 1 hour to reach the top.

She turns at the top and runs back down again at 6 km per hour.

How long in total does it take her to run up and down?

Answer_____ [3]

Examiner Only	
Marks	Remark
Total Question 15	

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THIS IS THE END OF THE QUESTION PAPER

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Question Number	**Marks**
1	
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15	
Total Marks	

Examiner Number

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Rewarding Learning

General Certificate of Secondary Education
January 2013

Mathematics

Unit T5 Paper 1

Foundation Tier

[GMT51]

TUESDAY 15 JANUARY
1.30 pm – 3.00 pm

MARK SCHEME

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Introduction

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

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			AVAILABLE MARKS
1	$30 \times 8 = 240$ $220 + 240 = 460$ Aaron £40	C1 C1 A1, A1	4
2	**(a)** $(4 \times 6) + (2 \times 2) + (-1 \times 2)$ **or** $24 + 4 - 2$ $= 26$	MA1 A1	
	(b) $(12 + 12 - 1 =) 23$	A1	
	(c) $28 - 16 = 12$ Answer 6	MA1 A1	5
3	**(a)** 5.48 am **or** 05 48	A1, A1 A2	
	(b) **(i)** 2.3	A1	
	(ii) 180	A1	4
4	**(a)** $50 \times 9 = 450$	M1, A1	
	(b) $74 \div 8 \rightarrow 9$ **or** answers of 8 or 9	M1, A1	
	(c) 30×9 270	MA1 A1	
	(d) $6.5 \leqslant$ estimate < 7	A1	7
5	**(a)** 11	A1	
	(b) 29	A1	
	(c) 23	A1	3
6	**(a)** $1 + 1 + 1 + 2 = 5$	M1, A1	
	(b) Shaded squares in correct place	A1	3
7	R at $\frac{2}{10}$ Y at $\frac{6}{10}$ B at 0	A1, A1, A1	3
8	$\frac{1}{7}$ or equivalent fraction	A1	1
9	Correct enlargement allow 1 for 3 correct sides	MA2	2

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				AVAILABLE MARKS
10	**(a)**	16 totals correctly entered in table (more than 10 correctly entered A1)	A2	
	(b)	5 identified in table or in work	A1	
		$\frac{5}{16}$ or follow through from incorrect table	A1	4
11	**(a)**	Correct reflection	A2	
	(b)	Shape moved 3 right and 5 down	A1, A1	4
12		$\frac{-2(8-2)}{4}$ **or** $\frac{-16+4}{4}$	MA1	
		$\frac{-12}{4}$	MA1	
		$= -3$	A1	3
13		p^8	A1	1
14		$\frac{700 \times 4}{0.9 - 0.7}$	MA1	
		$\frac{2800}{0.2}$	A1	
		$= 14\,000$	A1	3
15		Distance uphill $\rightarrow 4 \times 1 = 4$ km	MA1	
		Time to go down $\rightarrow \frac{4}{6} = \frac{2}{3}$ hrs **or** 40 mins	MA1	
		Total time $\rightarrow 1\frac{2}{3}$hrs, 1hr 40 mins, 100 mins	MA1	3
			Total	**50**

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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2012

Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier



[GMT51]

GMT51

MONDAY 11 JUNE 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 the question paper.
Complete in blue or black ink only. **Do not write in pencil or with a gel pen.**
Answer **all thirteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
You should have a ruler, compasses and protractor.
The Formula Sheet is on page 2.

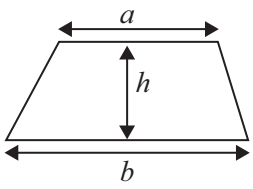
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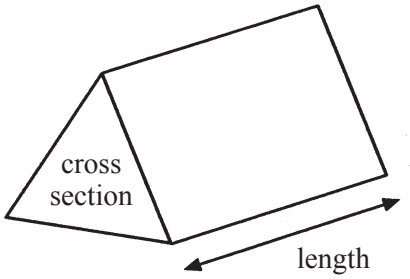
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Formula Sheet

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



Volume of prism = area of cross section × length

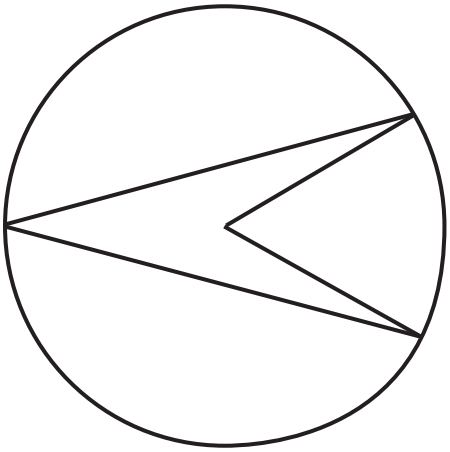


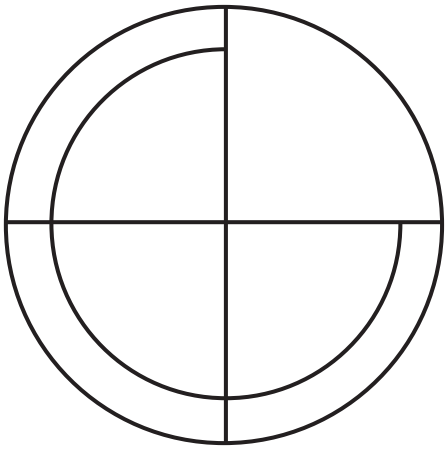
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Answer **all** questions.

Examiner Only	
Marks	Remark

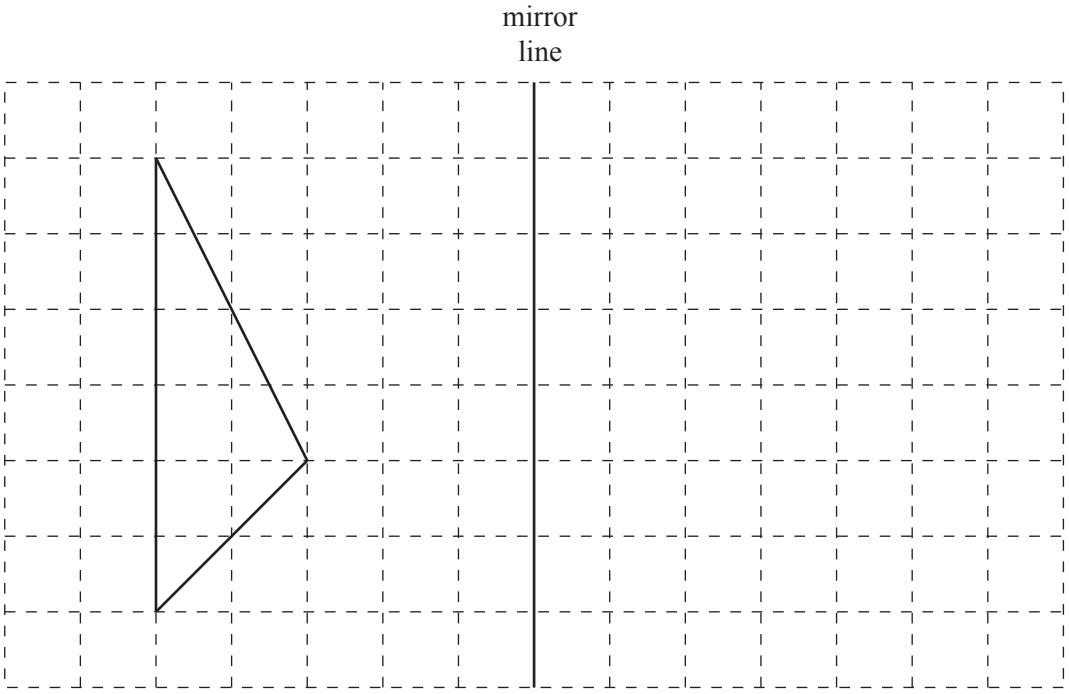
1 **(a)** Draw a line of symmetry on each shape below.





[2]

(b)



Draw the reflection of the triangle in the mirror line. [2]

Total Question 1

[Turn over

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2 A box contains 20 pens – 3 blue, 8 black, 7 red and 2 green.

A pen is taken at random from the box.

impossible **unlikely** **evens** **likely** **certain**

From the list of words given, write the most appropriate word to describe the chance of

(a) taking a green pen, _____ [1]

(b) taking a pen which is not blue, _____ [1]

(c) taking a pen which is black or green. _____ [1]

Examiner Only	
Marks	Remark
Total Question 2	

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3 **(a)** There were 43 people on a bus.

14 people got off the bus and 11 people got on the bus.

How many people were then on the bus?

Answer _____ people [2]

(b) Christine needs 100 tiles for a room.

Tiles are sold in boxes of 8.

Work out the least number of boxes of tiles that Christine needs to buy.

Answer _____ boxes [2]

(c) Estimate 96 + 0.3 + 1.7 + 301.4

Answer _____ [1]

(d) Estimate 186 × 4.3

Show your working.

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 3	

[Turn over

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4 From the probabilities listed, choose the most suitable to complete each statement.

0 **0.2** **0.5** **0.6** **0.8** **1**

(a) My bus is nearly always late.

The probability that my bus is late is _____ [1]

(b) It is impossible for me to attend the meeting.

The probability that I will attend the meeting is _____ [1]

(c) I will most likely not attend the concert.

The probability that I will attend the concert is _____ [1]

(d) I have always been on time for work.

The probability that I was on time for work is _____ [1]

Examiner Only	
Marks	Remark
Total Question 4	

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5 **(a)** $L = 4a + 5b$

Find the value of L when $a = 6$ and $b = 3$

Answer L = _____ [2]

(b) $W = 5p$

Find the value of W when $p = 2.5$

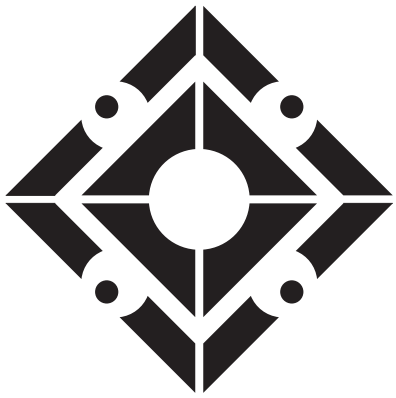
Answer W = _____ [1]

Examiner Only	
Marks	Remark
Total Question 5	

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Examiner Only	
Marks	Remark

6 (a) (i)

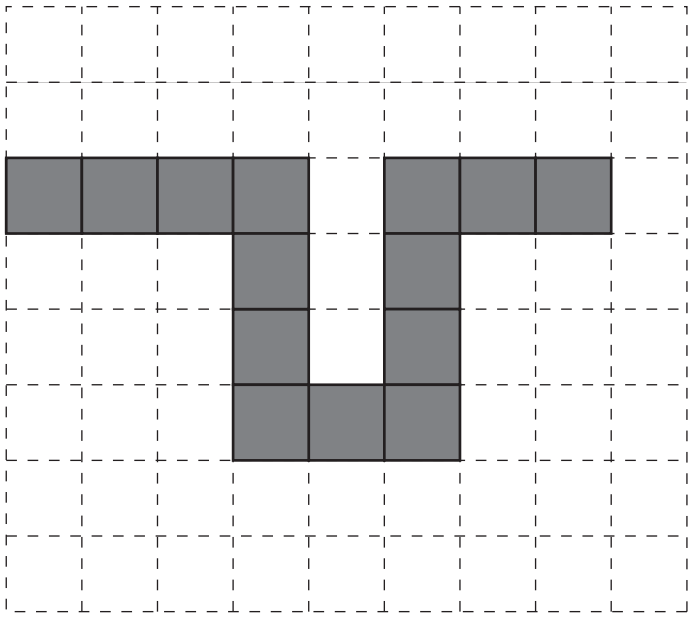


What is the order of rotational symmetry of the shape above?

Answer _____ [1]

(ii) Draw **all** the lines of symmetry on the shape above. [2]

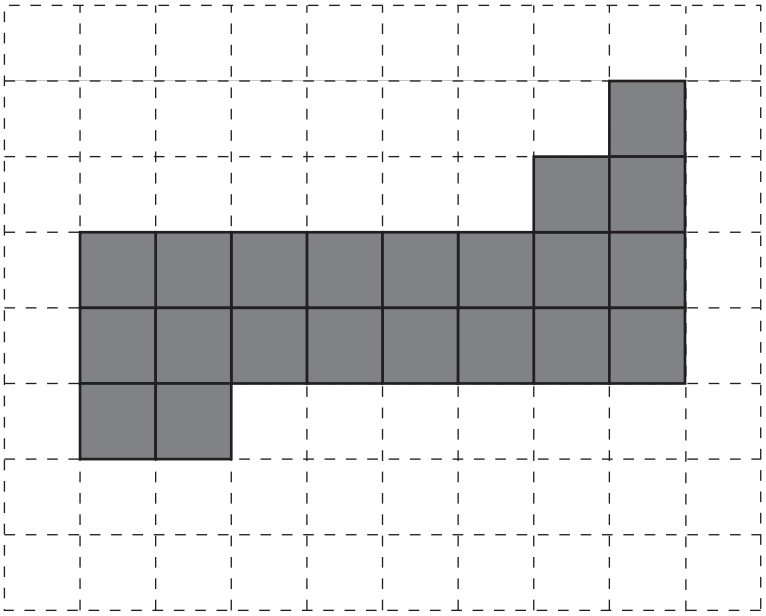
(b) (i) Shade one square in the following diagram so that the complete shaded shape has one line of symmetry.



[1]

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(ii) Shade one square in the following diagram so that the complete shaded shape has rotational symmetry of order 2.



[1]

Examiner Only	
Marks	Remark
Total Question 6	

[Turn over

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7 **(a)** Estimate $\sqrt{40}$

Answer _____ [1]

(b) Calculate:

(i) $4 + 3 \times 5$

Answer _____ [1]

(ii) $10 \div 2 + 3$

Answer _____ [1]

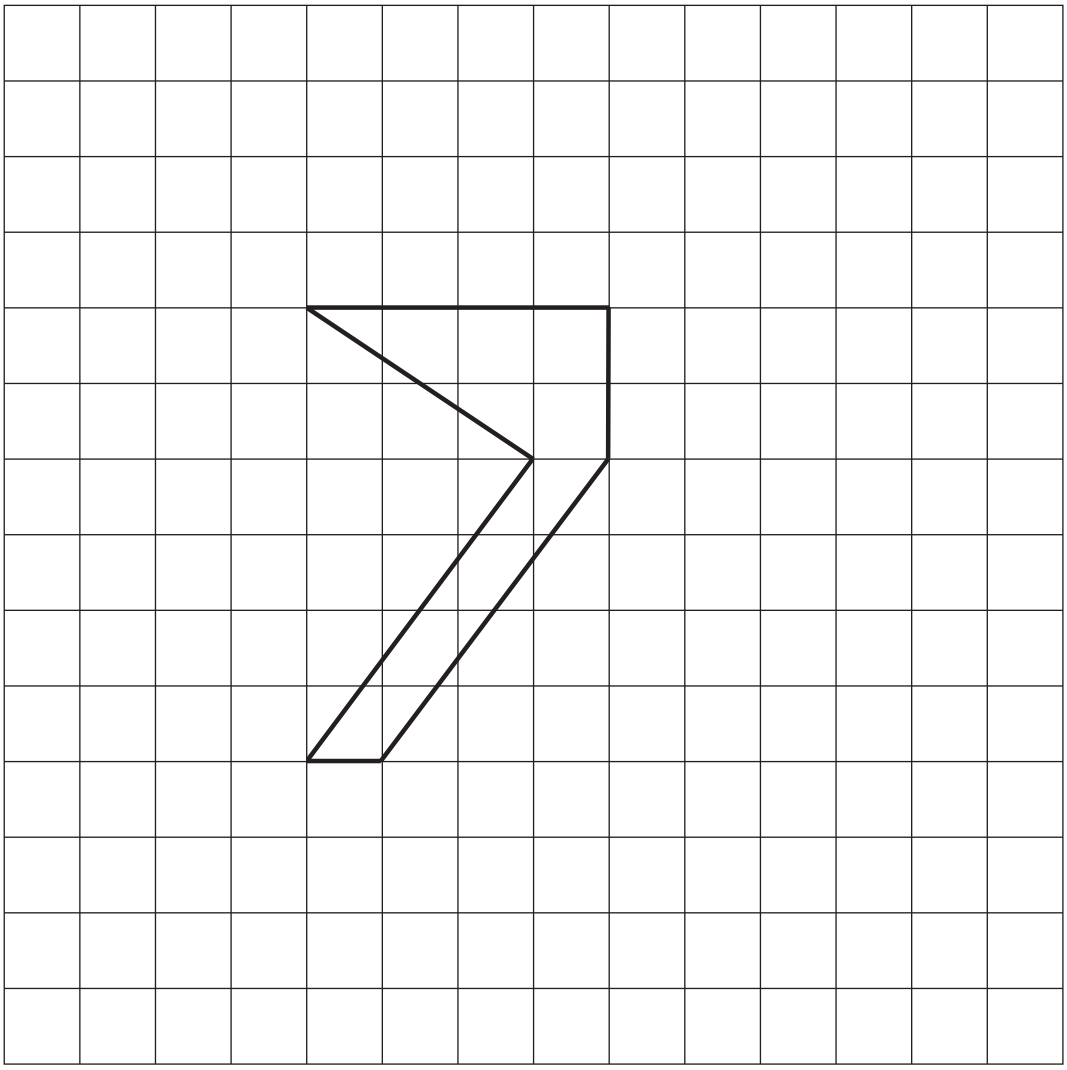
(iii) $24 - 18 \div 3$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 7	

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8 **(a)** **(i)** Enlarge the shape by scale factor 2.



[2]

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

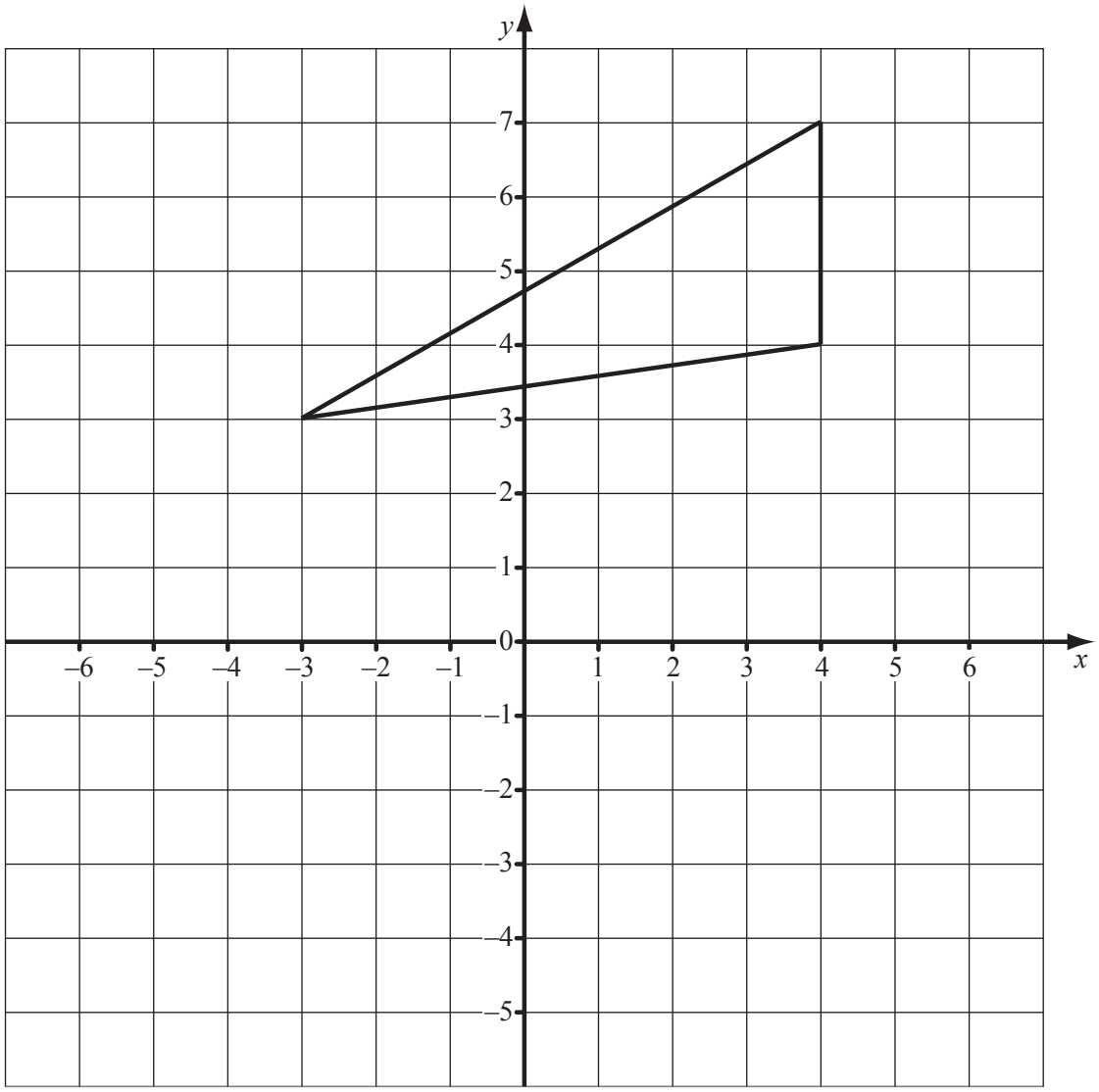
Answer _____ [2]

Examiner Only	
Marks	Remark

[Turn over

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(b) Reflect the triangle below in the line $y = 1$.



[2]

Examiner Only	
Marks	Remark
Total Question 8	

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9 A letter is taken at random from the word

G E O G R A P H I C A L

Write down the probability that the letter is:

(a) the letter G,

Answer _____ [1]

(b) a vowel,

Answer _____ [1]

(c) **not** in the word GRAPH.

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 9	

[Turn over

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10 **(a)** Share 72 sweets in the ratio 8:1

Answer _____ , _____ [2]

(b) Given that $689 \times 537 = 369993$, write down the value of $\dfrac{369993}{53700}$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 10	

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11 Write down all the values of n, where n is an integer, such that $-9 \leqslant 3n < 3$

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 11	

[Turn over

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12 Work out the reciprocal of 1.5

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 12	

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13 A bag contains 4 toffee sweets, 6 nut sweets and some fruit sweets.

Examiner Only	
Marks	Remark

(a) The probability of me taking a fruit sweet from the bag is $\frac{1}{2}$

How many fruit sweets are in the bag?

Answer _____ [1]

(b) I eat 2 toffee sweets. What is the probability that the next sweet I take is toffee?

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

Total Question 13	

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

Examiner Number

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New Specification

Rewarding Learning

General Certificate of Secondary Education
2012

Mathematics

Unit T5 Paper 1
Foundation Tier

[GMT51]

MONDAY 11 JUNE
1.30 pm–2.30 pm

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.

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				AVAILABLE MARKS
1	**(a)** correct lines		A2	
	(b) reflection		A2	4
2	**(a)** unlikely		A1	
	(b) likely		A1	
	(c) evens		A1	3
3	**(a)** $43 - 14 = 29$	**or** $14 - 11 = 3$	MA1	
	$29 + 11 = 40$	$43 - 3 = 40$	A1	
	(b) $100 \div 8 = 12\frac{1}{2}$		MA1	
	13		A1	
	(c) 400		A1	
	(d) 200×4		MA1	
	800		A1	7
4	**(a)** 0.8		A1	
	(b) 0		A1	
	(c) 0.2		A1	
	(d) 1		A1	4
5	**(a)** $4 \times 6 + 5 \times 3$		MA1	
	39		A1	
	(b) 12.5		A1	3
6	**(a)** **(i)** 4		A1	
	(ii) 4 correct lines	(allow A1 for 2 correct)	A2	
	(b) **(i)** correct square		A1	
	(ii) correct square		A1	5

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				AVAILABLE MARKS
7	**(a)**	6.1 to 6.5	A1	
	(b)	**(i)** 19	A1	
		(ii) 8	A1	
		(iii) 18	A1	4
8	**(a)**	**(i)** correct enlargement (allow A1 for 3 sides correct)	A2	
		(ii) 4 award A1 for 1 : 4	A2	
	(b)	correct reflection	A2	6
9	**(a)**	$\frac{2}{12}$ or $\frac{1}{6}$	MA1	
	(b)	$\frac{5}{12}$	MA1	
	(c)	$\frac{5}{12}$	MA2	4
10	**(a)**	64, 8	M1, A1	
	(b)	6.89	A1	3
11		$-3 \leq n < 1$	MA1	
		$-3, -2, -1, 0$	A1	2
12		$\frac{1}{1.5}$	MA1	
		$\frac{2}{3}$	A1	2
13	**(a)**	10	A1	
	(b)	$\frac{2}{18}\left(\frac{1}{9}\right)$	MA2	3
			Total	**50**

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