CCEA GCSE MATHEMATICS (MODULAR)

MATHS



EXAM QUESTION PACK

MODULE N5 PAPER 2 (CALCULATOR) FOUNDATION TIER GMN52 PAPERS

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2012

Mathematics



Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

MONDAY 16 JANUARY
10.45 am–11.45 am

GMN52

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

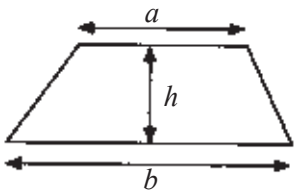
The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a calculator, ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

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

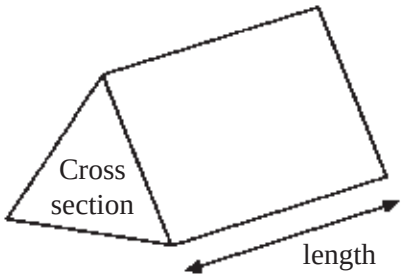
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Formula Sheet

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

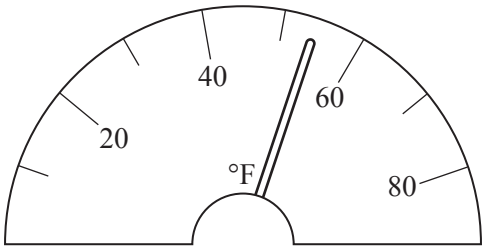


Volume of prism = area of cross section × length



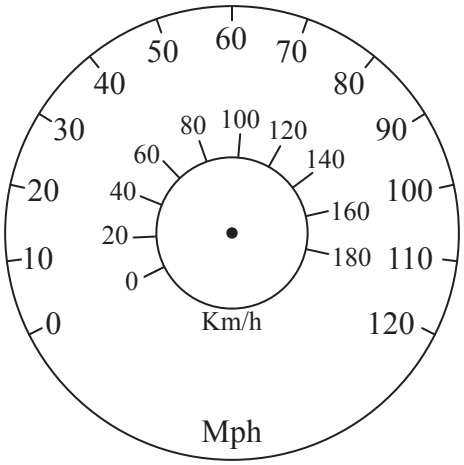
Examiner Only	
Marks	Remark

1 **(a)** Estimate the reading shown on the dial.



Answer _____ °F [1]

(b) Use the dial shown to estimate what 45 mph would be in km/h.



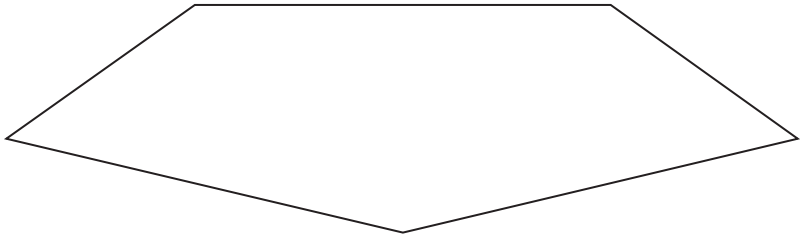
Answer _____ km/h [1]

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2 Draw all lines of symmetry on the shapes below.

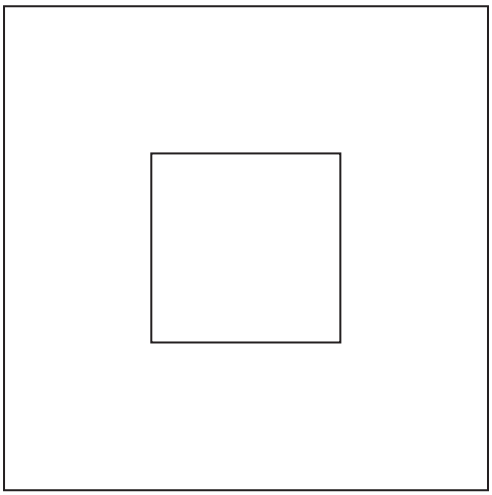
Examiner Only	
Marks	Remark

(a)



[1]

(b)

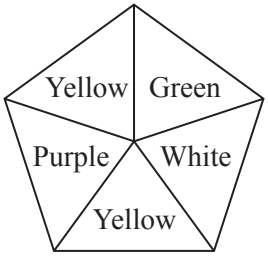


[2]

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Examiner Only	
Marks	Remark

3 (a)

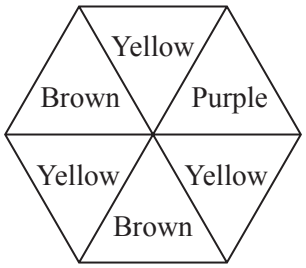


First Spinner

On what colour is the spinner most likely to land?

Answer _____ [1]

(b)



Second Spinner

On what colour is this spinner least likely to land?

Answer _____ [1]

(c) Paul thinks that he has more of a chance of getting Purple on the second spinner than on the first spinner because it has only 3 colours while the first has 4 colours.

Explain why Paul is wrong.

_____

_____ [2]

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Examiner Only	
Marks	Remark

4 **(a)** Jim bought a new television on Hire Purchase.

He paid £120 deposit and £45 per month for 9 months.

How much did he pay in **total** for the television?

Answer £ _____ [3]

(b)

Please send me	Number	Price	Sub Total
A105 Standard Rice Cooker		£24.99	
A115 Large Rice Cooker		£31.99	
A292 Best Rice Cookery Book		£5.49	
A293 Extra Copy Cookery Book		£8.49	
		Courier delivery	5.75
		Total £	

Complete the mail order form for two Large Rice Cookers and one Best Rice Cookery Book, including Courier delivery. [3]

(c) Jenny works in her local shop.

She earns £6.50 per hour, Monday to Friday.

She earns "time and a half" for weekend work.

In a particular week, Jenny worked 12 hours altogether from Monday to Friday. She also did 4 hours weekend work.

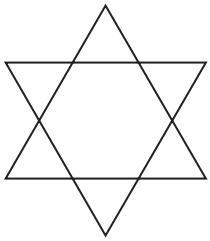
How much did she earn in total?

Answer £ _____ [4]

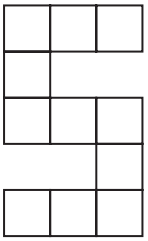
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Examiner Only	
Marks	Remark

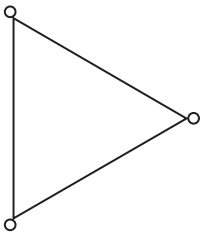
5 What is the order of rotational symmetry for each of these shapes?

(a) 

Order _____

(b) 

Order _____

(c) 

Order _____

[3]

6 In a raffle 300 tickets are sold.

There is only one prize.

Mr Bond buys 8 tickets, Mrs Bond buys 15 tickets and their children, Jack and Jill, buy 3 tickets each.

(a) What is the probability that Mrs Bond wins the prize?

Answer _____ [2]

(b) What is the probability that none of the family wins the prize?

Answer _____ [2]

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7 **(a)** Draw a quadrilateral with rotational symmetry of order 2. [1]

(b) Draw a different type of quadrilateral which also has rotational symmetry of order 2. [1]

Examiner Only	
Marks	Remark

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8 The total cost of a car is given by the formula

$$\text{Total cost} = \text{deposit} + \text{monthly payment} \times 12$$

(a) Colin pays a deposit of £2 500 and his monthly payment is £200.

Find the total cost of his car.

Answer £ _____ [2]

(b) Sylvia pays no deposit and her monthly payment is £500.

What is the total cost of Sylvia's car?

Answer £ _____ [1]

(c) In your own words, explain what the 12 in the formula stands for.

Answer _____ [1]

(d) The total cost of Hugh's car is £8 000 and his deposit is £2 600.

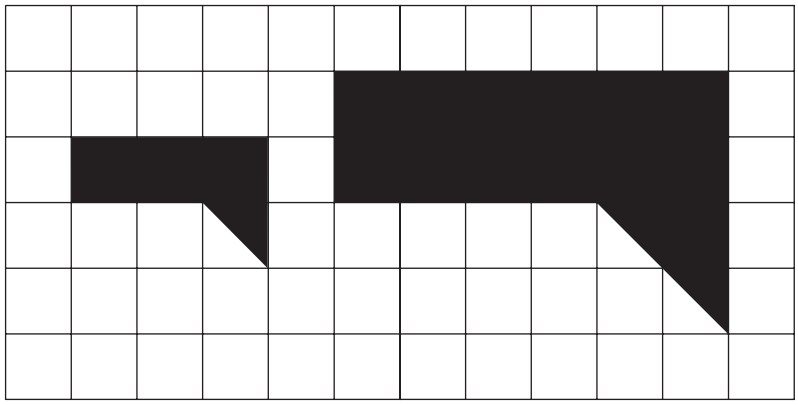
Work out Hugh's monthly payment.

Answer £ _____ [3]

Examiner Only	
Marks	Remark

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9



SHAPE A SHAPE B

Shape B is the image of shape A after an enlargement.

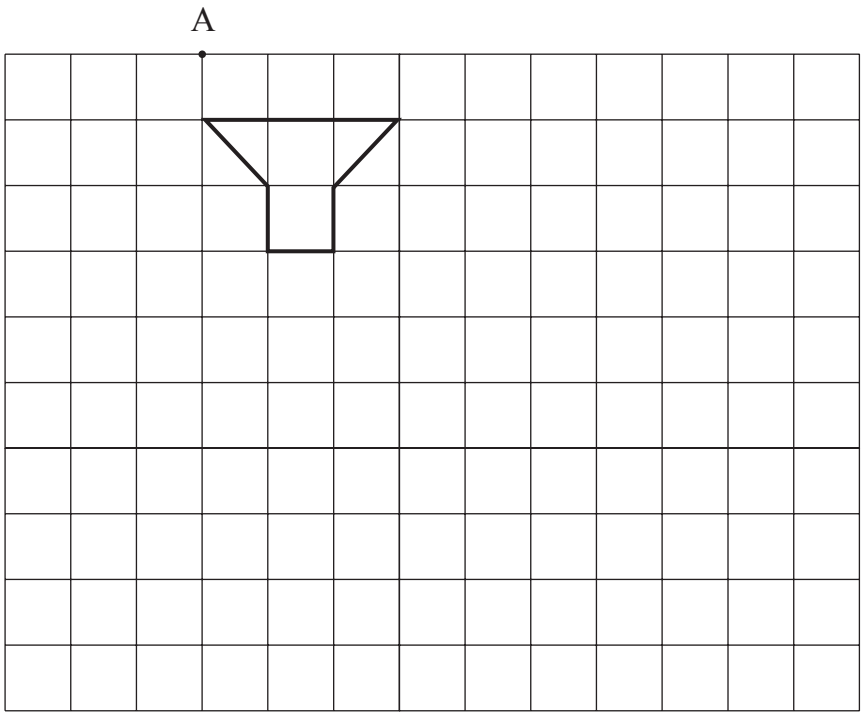
(a) Write down the scale factor of the enlargement.

Answer _____ [1]

(b) How many times bigger is the area of shape B than the area of shape A?

Answer _____ [2]

(c) Draw an enlargement of the shape below using a scale factor of 3 and centre A.



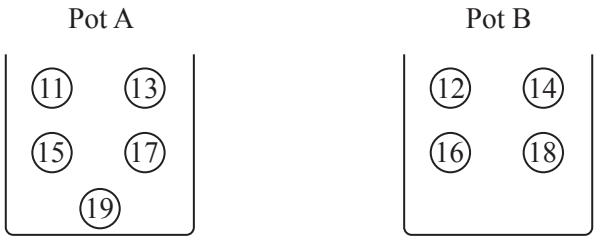
[3]

Examiner Only

Marks	Remark

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10 Two pots, A and B, contain numbered discs that are all the same size.



(a) Julie takes a disc at random from each pot.

She adds the numbers on the two discs.

Complete the table to show all the possible scores.

		Pot A				
	+	11	13	15	17	19
Pot B	12	23	25			
	14	25				
	16					
	18					

[2]

(b) Find the probability of Julie scoring less than 29.

Answer _____ [2]

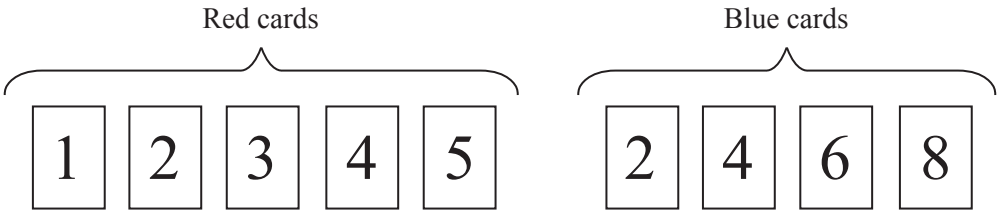
Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

11



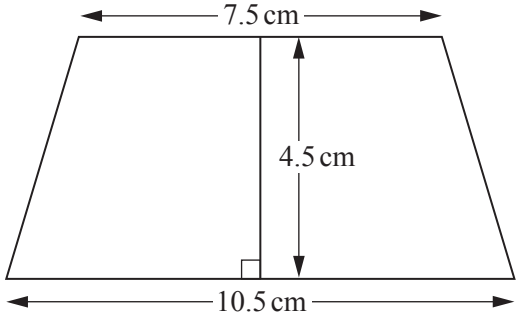
There are two sets of cards on a table.

Both sets of cards are mixed together and one card is then taken at random.

What is the probability that this card will be a blue card or a card numbered 4 or both?

Answer _____ [2]

12



Calculate the area of the trapezium.

Answer _____ cm^2 [2]

13 Peter and Paul share a sum of money in the ratio 5 : 4

Peter gets £16 more than Paul.

How much money is shared between the boys?

Answer £ _____ [3]

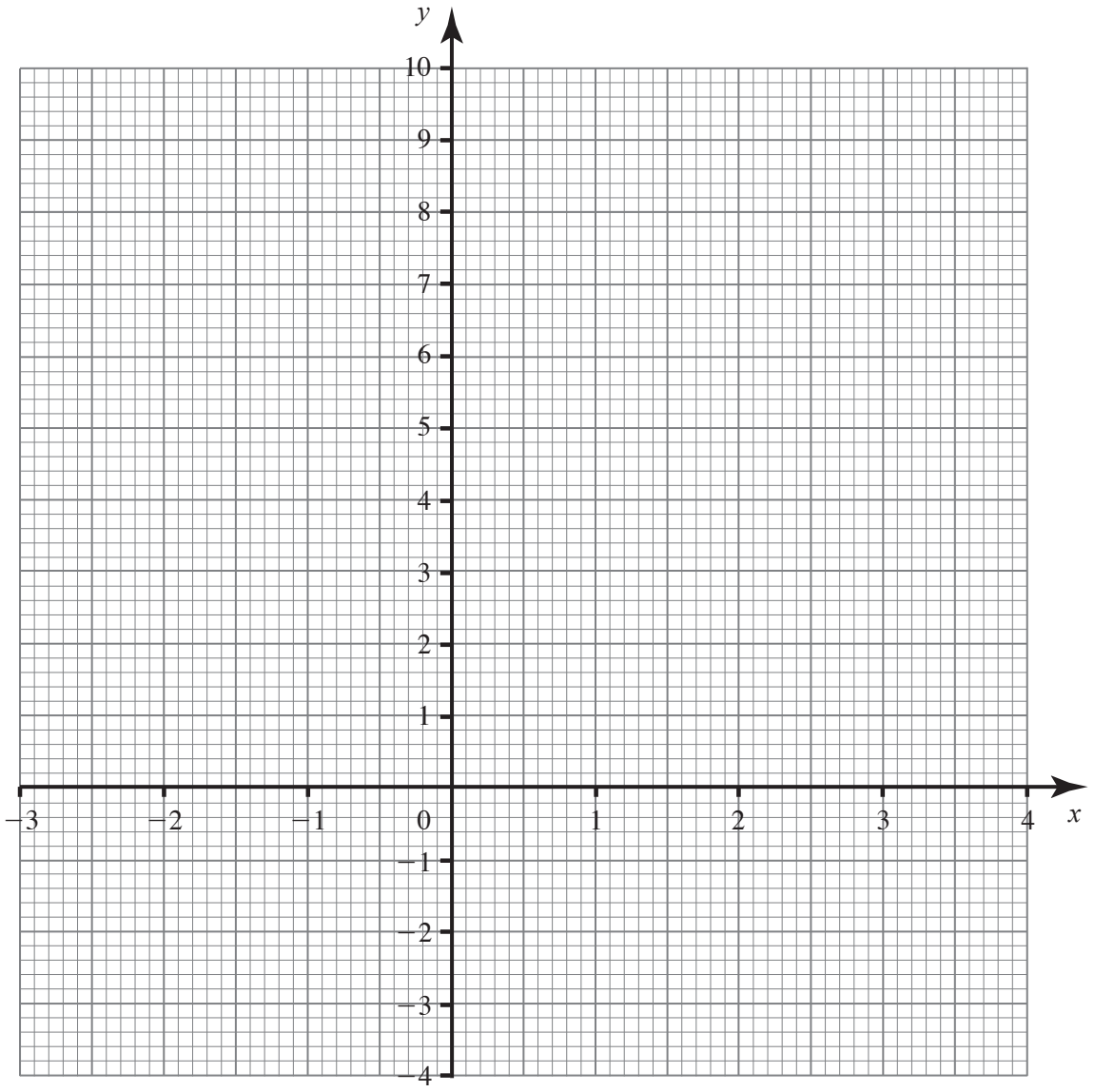
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14 **(a)** Complete the table for $y = 2x^2 - 2x - 3$

x	-2	-1	0	1	2	3
y		1	-3	-3		9

[2]

(b) Draw the graph of $y = 2x^2 - 2x - 3$ for $x = -2$ to $x = 3$ on the grid.



[2]

Examiner Only

Marks	Remark

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THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
January 2012

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

MONDAY 16 JANUARY
10.45 am – 11.45 am

MARK SCHEME

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Introduction

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

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

M indicates marks for correct method.

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

MA indicates marks for combined method and accurate working.

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

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

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

Positive marking:

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

Some common examples of this occur in the following cases:

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

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

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

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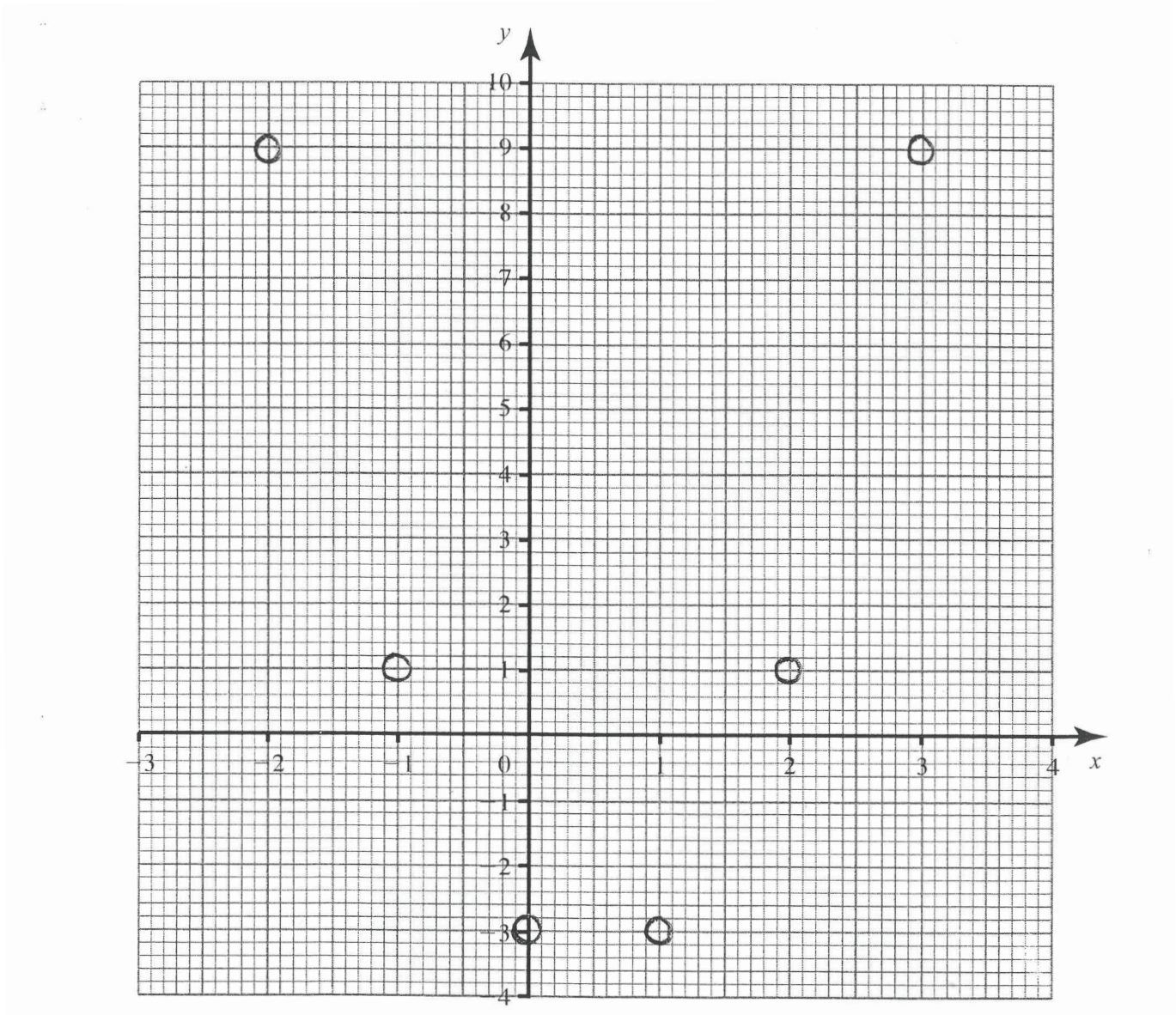
				AVAILABLE MARKS
1	**(a)**	Approx 54	A1	
	(b)	in range 70–74	A1	2
2	**(a)**	One vertical line	A1	
	(b)	One vertical, one horizontal and 2 diagonals	A2	3
3	**(a)**	yellow	A1	
	(b)	purple	A1	
	(c)	On first 1 chance in 5, on second 1 chance in 6 which is smaller	A2	4
4	**(a)**	$120 + 45 \times 9$	M1	
		$120 + 405$	A1	
		525	A1	
	(b)	2 63.98	A1	
		1 5.49	A1	
		5.75		
		75.22	A1	
	(c)	$£6.50 \times 12 = £78$	MA1	
		$£6.50 \times 1\frac{1}{2} = £9.75$	MA1	
		$4 \times 9.75 = £39$	MA1	
		$£39 + £78 = £117$	A1	10
5	**(a)**	6	A1	
	(b)	2	A1	
	(c)	3	A1	3
6	**(a)**	$\frac{15}{300}$ or equivalent	MA2	
	(b)	$\frac{271}{300}$	MA2	4
7	**(a), (b)**	Rectangle, parallelogram, rhombus	A1, A1 any order	2

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				AVAILABLE MARKS
8	**(a)** $2500 + 200 \times 12$	MA1		
	4900	A1		
	(b) 6000	A1		
	(c) number of payments	A1		
	(d) $8000 - 2600 = 5400$	MA1		
	$5400 \div 12$	M1		
	450	A1		7
9	**(a)** 2	A1		
	(b) 4	A2		
	(c) correct enlargement	A3		6
10	**(a)** 27 29 31 / 27 29 31 33 / 27 29 31 33 35 / 29 31 33 35 37	A2		
	(b) $\frac{6}{20}$ or equivalent	MA2		4
11	Identifying 5 cards	MA1		
	$\frac{5}{9}$	A1		2
12	$\frac{1}{2}(7.5 + 10.5) \times 4.5$	M1		
	40.5	A1		2
13	1 part represents 16	MA1	**or** 1 part represents 16	MA1
			Peter = 80	
			Paul = 64	MA1
	9 parts = 9 × 16 = 144	M1A1	Total = 144	A1 3
14	**(a)** 9, 1	A2		
	(b) correct points	A1		
	smooth curve	A1		4
		Total		**56**

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GCSE MATHEMATICS JANUARY 2012
MODULE N5–2
OVERLAY QUESTION 14B



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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2011

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier



GMN52

[GMN52]

MONDAY 6 JUNE

2.45 pm – 3.45 pm

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

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

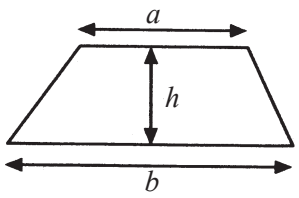
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Examiner Number

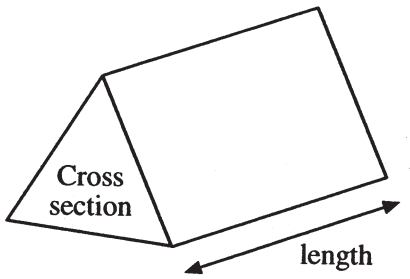
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Formula Sheet

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



Volume of prism = area of cross section × length



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1 **(a)** Draw a line of symmetry on the diagram below.



[1]

(b) **(i)** In the space below draw a sketch of a square-based pyramid.

[1]

(ii) Using your pyramid, work out the answer to the following calculation.

Number of faces + number of vertices − number of edges

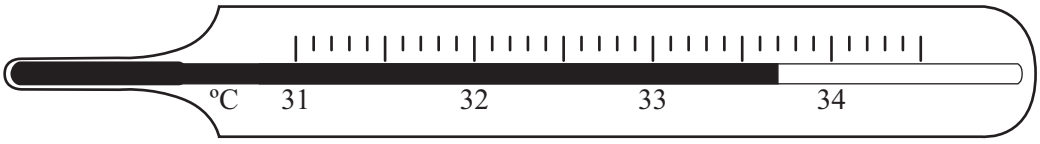
Show your working.

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 1	

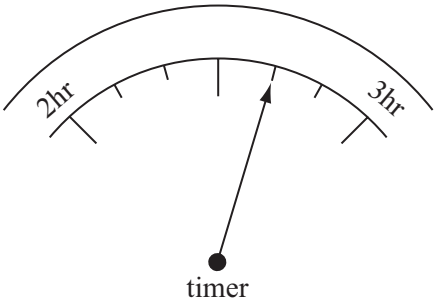
Examiner Only	
Marks	Remark

2 **(a)** Write down the temperature shown on the thermometer.



Answer _____ °C [1]

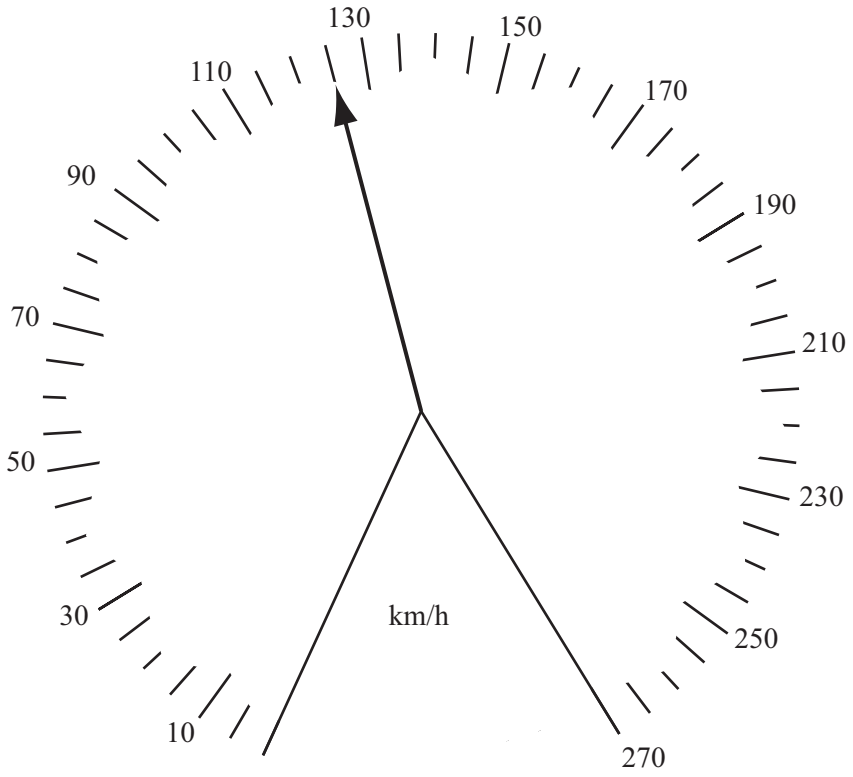
(b) Write down the reading from the timer.



Answer ____ hrs ____ mins [1]

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(c) The speedometer below shows the speed in km/h.



(i) What speed is shown?

Answer _____ km/h [1]

(ii) On the speedometer draw an arrow to show a speed of 158 km/h. [1]

(iii) What is the difference between the speed in **(i)** and the speed in **(ii)**?

Answer _____ km/h [1]

Examiner Only	
Marks	Remark
Total Question 2	

3 The Print Pot advertise printing costs as

Cost (pence) = 35 × colour prints + 10 × black and white prints

(a) Gemma gets 3 colour prints and 2 black and white prints.

Work out the cost in pounds (£).

Answer £ _____ [2]

(b) The Fast Print advertise their printing costs as

Cost (pence) = 30 × number of prints + 90

How much would Gemma have paid in The Fast Print?

Answer £ _____ [2]

Examiner Only

Marks	Remark

Total Question 3

4 The following temperatures were recorded in ºC over a period of time

12, −2, 7, −9, 13, −14, 6, −10

From the list write down

(a) the warmest temperature, Answer _____ ºC [1]

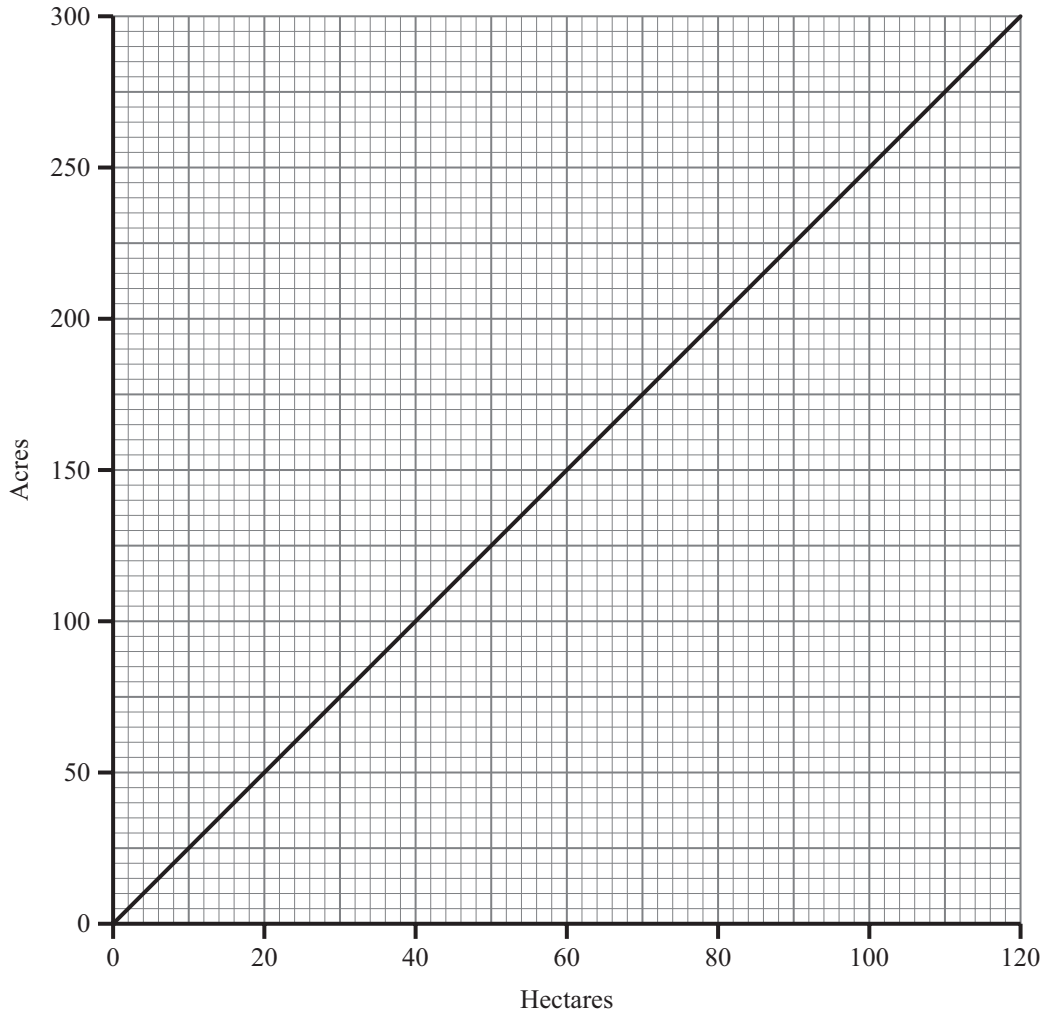
(b) the coldest temperature. Answer _____ ºC [1]

Total Question 4

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5 Land area can be measured in hectares or in acres.

The conversion graph shows how to convert between hectares and acres.



(a) How many hectares are in 220 acres?

Answer _____ hectares [1]

(b) Work out the number of acres in 150 hectares.

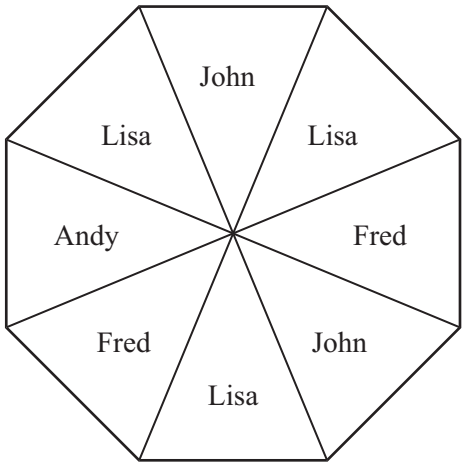
Answer _____ acres [1]

(c) Complete the sentence

An acre is _____ times greater than a hectare. [1]

Examiner Only	
Marks	Remark
Total Question 5	

6 The spinner below is a regular octagon. It can land on any name.



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

Answer _____ [1]

(b) Which two names is the spinner equally likely to land on?

Answer _____ , _____ [1]

(c) Write down a name which the spinner **cannot** land on.

Answer _____ [1]

(d) Is the spinner more likely to land on a boy's or girl's name?

Answer _____ [1]

(e) The spinner is spun 200 times. How many times would you expect it to land on the name Lisa?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 6	

7

A H J N P S W X

(a) Write down the two letters from above which have exactly **one** line of symmetry.

Answer _____ , _____ [1]

(b) Write down the two letters from above which have rotational symmetry of order 2 **and** two lines of symmetry.

Answer _____ , _____ [2]

(c) Write down the two letters from above which have rotational symmetry of order 2 **and** no lines of symmetry.

Answer _____ , _____ [2]

Examiner Only	
Marks	Remark
Total Question 7	

---

8 Put brackets in the following statements to make them true

(a) $5 \times 4 + 3 - 2 = 33$ [1]

(b) $9 - 3 \times 2 + 7 = 54$ [1]

Total Question 8

9 800 tickets numbered 1 to 800 are sold for a raffle.

(a) What is the probability that the winning ticket has a number greater than 550?

Answer _____ [2]

(b) The probability that a male has the winning ticket may not be $\frac{1}{2}$.
Explain why.

Answer _____

_____ [1]

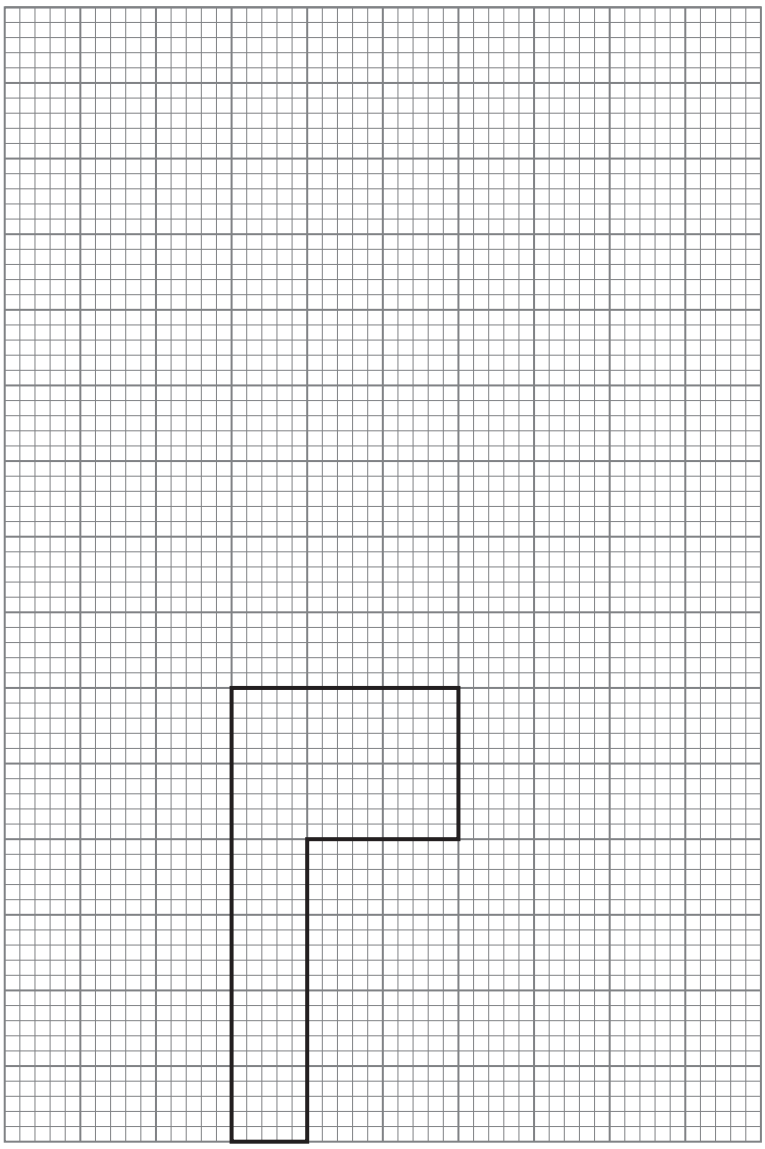
Examiner Only	
Marks	Remark
Total Question 9	

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10 **(a)** What 5-sided shape has rotational symmetry of order 5?

Answer _____ [2]

(b) Enlarge the shape below using a scale factor of 2



[2]

Examiner Only	
Marks	Remark
Total Question 10	

11 The exchange rate for £ to euro was £1 = €1.15
Jim bought a pair of jeans which cost €90
How much did the jeans cost in £?

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 11	

12 Tony selects a ball at random from a bag containing 8 blue, 1 green and 4 white balls.

What is the probability that Tony selects a

(a) green ball?

Answer _____ [1]

(b) white ball?

Answer _____ [1]

(c) ball which is **not** white?

Answer _____ [1]

(d) red ball?

Answer _____ [1]

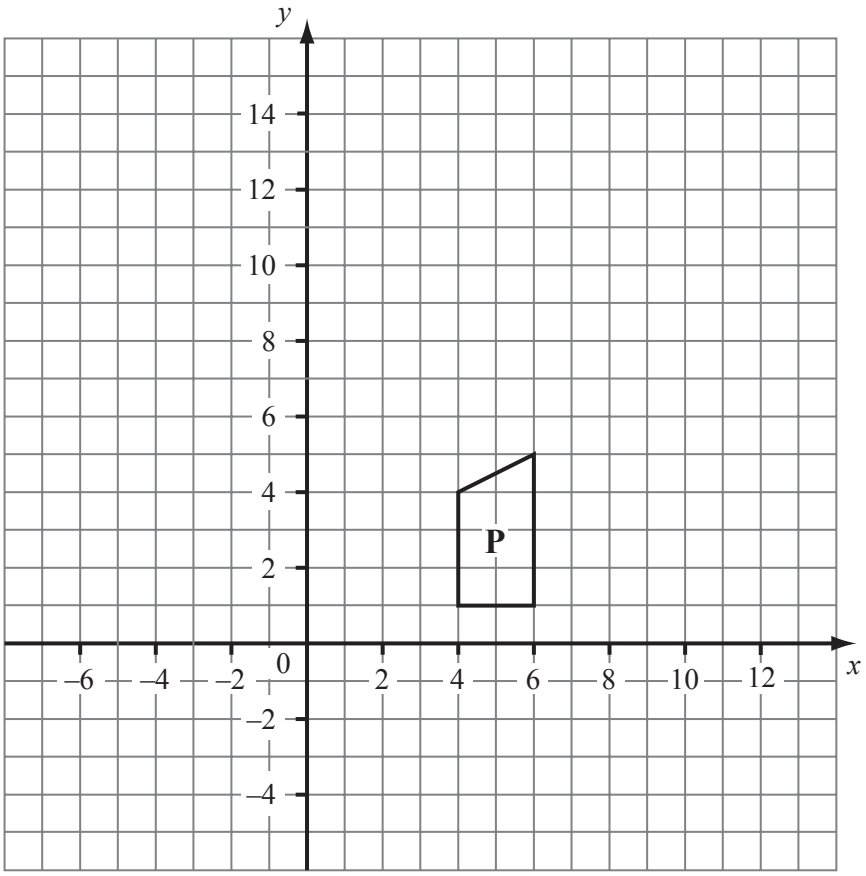
(e) blue or a green ball?

Answer _____ [2]

Total Question 12	

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13



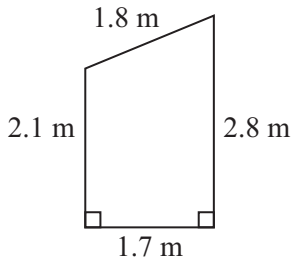
Shape P is shown on the grid.

(a) Reflect P in the y axis. [1]

(b) Draw the image of shape P after a translation $\begin{pmatrix} -3 \\ 5 \end{pmatrix}$. [2]

Examiner Only	
Marks	Remark
Total Question 13	

14



The diagram represents the side view of a garden shed with a sloping roof.
Calculate the area of the side view of the shed.
Give your answer to an appropriate degree of accuracy.

Answer _____ m^2 [3]

Examiner Only

Marks	Remark

Total Question 14

15 To calculate the amount of income tax on his earnings, Tom used the following information.

Total earnings = £24,265
Tax free personal allowance = £5,895
10% tax on first £3,200 of taxable income
28% tax on taxable income from £3,201 to £42,600

What total amount of income tax should he have calculated?

Answer £ _____ [4]

Total Question 15

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THIS IS THE END OF THE QUESTION PAPER

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111335

Rewarding Learning

General Certificate of Secondary Education
2011

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

MONDAY 6 JUNE

2.45 pm – 3.45 pm

MARK SCHEME

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Introduction

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General Marking Advice

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

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

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

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

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

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

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

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

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

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

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				AVAILABLE MARKS
1	**(a)**	Correct line of symmetry drawn	A1	
	(b)	**(i)** Sketch of pyramid	A1	
		(ii) Faces = 5, Vertices = 5, Edges = 8	MA1	
		$F + V - E = 2$	A1	4
2	**(a)**	33.7	A1	
	(b)	2 hrs 40 mins	A1	
	(c)	**(i)** 125	A1	
		(ii) correct arrow	A1	
		(iii) 33	A1	5
3	**(a)**	$35 \times 3 + 2 \times 10$ £1.25	M1 A1	
	(b)	$30 \times 5 + 90$ £2.40	M1 A1	4
4	**(a)**	13	A1	
	(b)	–14	A1	2
5	**(a)**	88	A1	
	(b)	375	MA1	
	(c)	0.4	A1	3
6	**(a)**	Lisa	A1	
	(b)	John, Fred	A1	
	(c)	any name not on spinner	A1	
	(d)	boy	A1	
	(e)	$\frac{3}{8} \times 200 = 75$	M1 A1	6

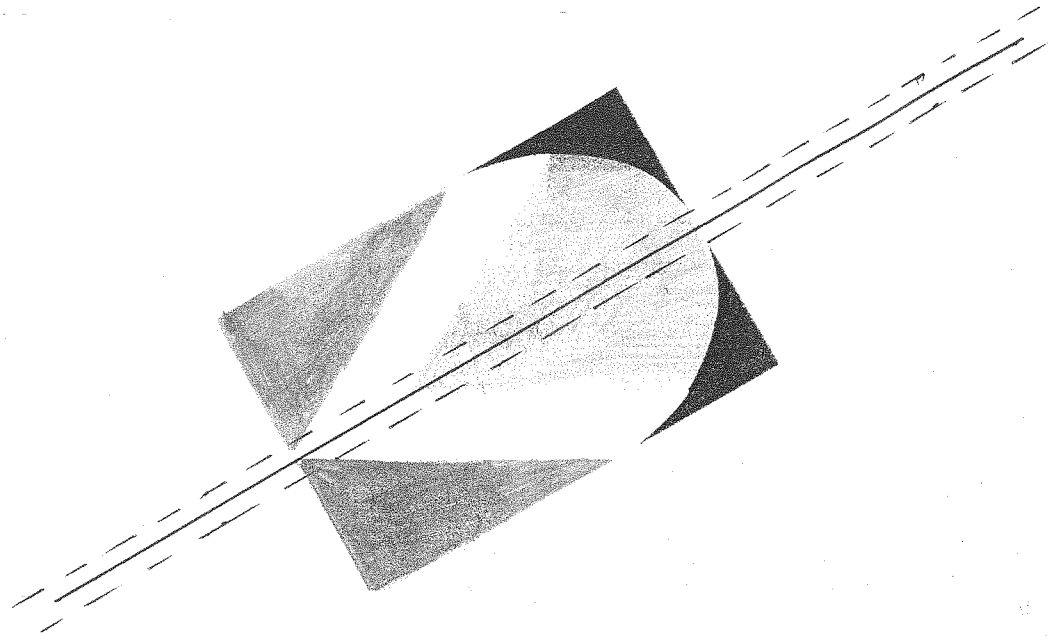
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			AVAILABLE MARKS
7	**(a)** A, W	A1	
	(b) H, X	A1 A1	
	(c) N, S	A1 A1	5
8	**(a)** $5 \times (4 + 3) - 2 = 33$	A1	
	(b) $(9 - 3) \times (2 + 7) = 54$	A1	2
9	**(a)** $1 - \frac{550}{800}$ or 250	MA1	
	$\frac{250}{800}$ or $\frac{25}{80}$ or $\frac{5}{16}$	MA1	
	(b) suitable explanation e.g. more males than females may have bought tickets	MA1	3
10	**(a)** regular pentagon	A1 A1	
	(b) correct enlargement	A2	4
11	90 ÷ 1.15	M1	
	£78.26	A1	2
12	**(a)** $\frac{1}{13}$	A1	
	(b) $\frac{4}{13}$	A1	
	(c) $\frac{9}{13}$	A1	
	(d) 0	A1	
	(e) $\frac{8}{13} + \frac{1}{13} = \frac{9}{13}$	M1 A1	6

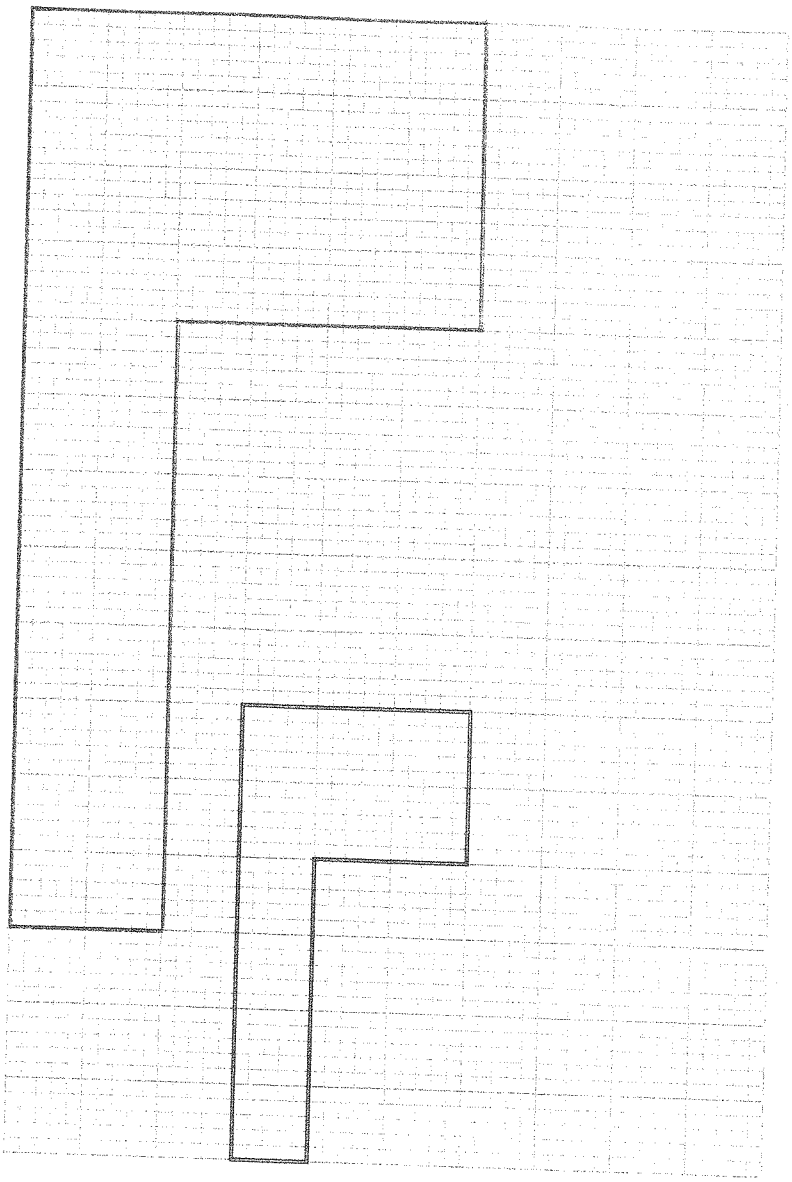
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			AVAILABLE MARKS
13	**(a)** reflection	A1	
	(b) 3 left	A1	
	5 up	A1	3
14	$\frac{1}{2}(2.1+2.8) \times 1.7$	MA1	
	4.165	A1	
	4.2	A1	3
15	10% of 3200 = 320	MA1	
	24265 − 5895 − 3200 = 15170	MA1	
	0.28 × 15170 = 4247.6	MA1	
	4567.60	MA1	4
		Total	**56**

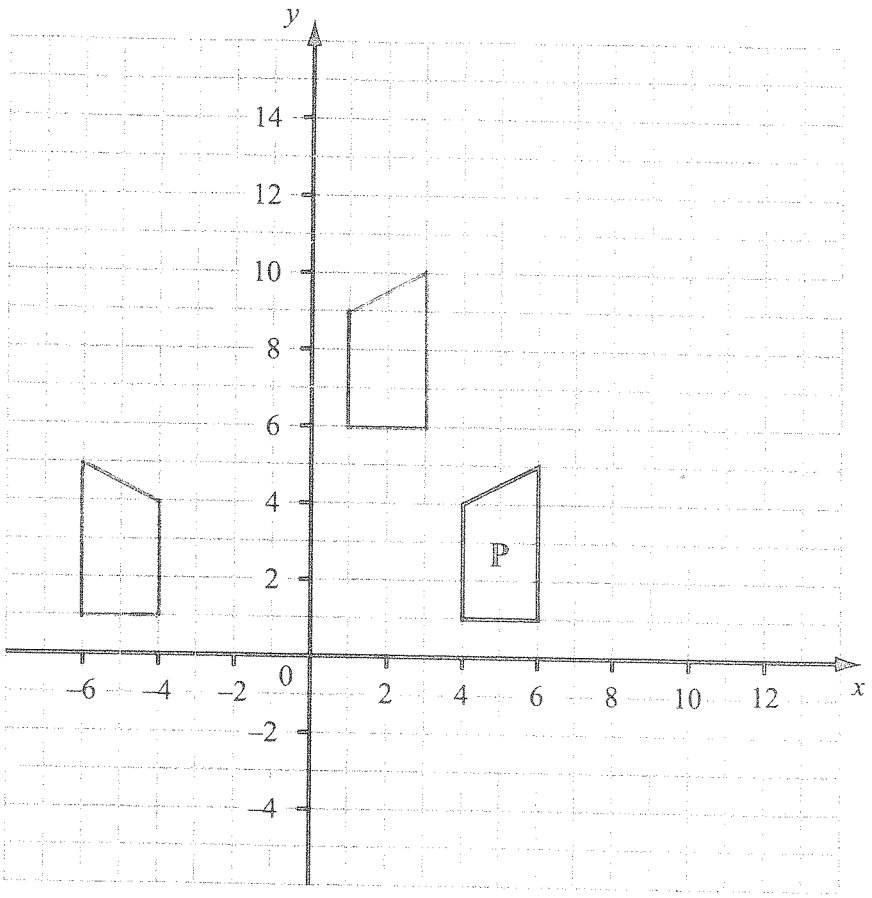
GCSE MATHEMATICS SUMMER 2011
MODULE N5-2
OVERLAYS QUESTION 1



GCSE MATHEMATICS SUMMER 2011
MODULE N5-2
OVERLAYS QUESTION 10



GCSE MATHEMATICS SUMMER 2011
MODULE N5-2
OVERLAYS QUESTION 13



Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

FRIDAY 14 JANUARY

10.45 am – 11.45 am

GMN52

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

INFORMATION FOR CANDIDATES

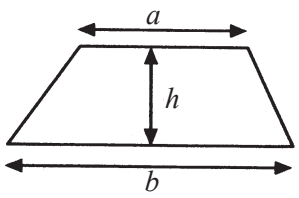
The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a calculator, ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

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

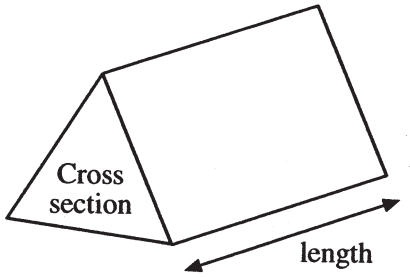
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Formula Sheet

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

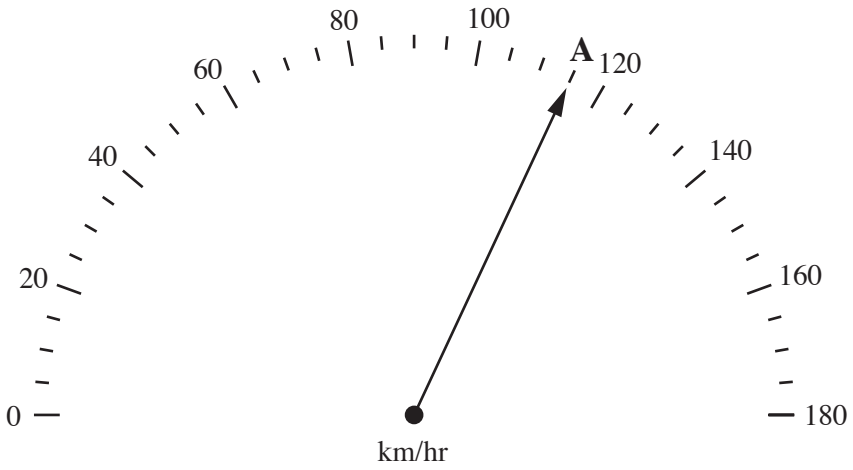


Volume of prism = area of cross section × length



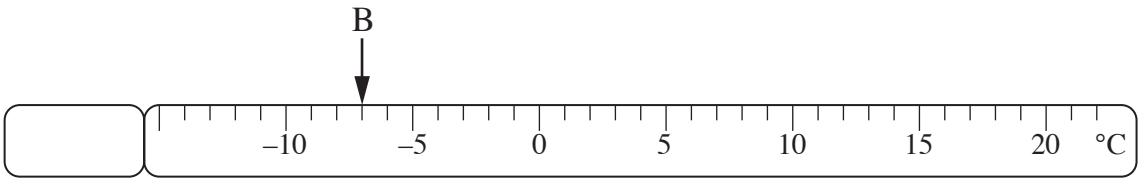
Examiner Only	
Marks	Remark

1 **(a)** What speed is indicated on the speedometer at **A**?



Answer _____ km/h [1]

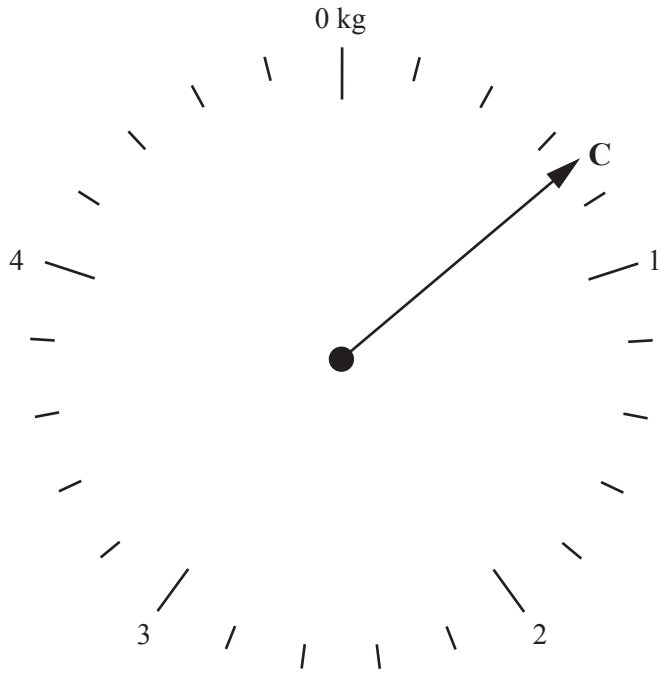
(b) What temperature is indicated on the thermometer at B?



Answer _____ °C [1]

(c) **(i)** The scales below can measure up to 5 kg.

What weight, in **grams**, is indicated on the scales at **C**?



Answer _____ g [1]

(ii) Draw an arrow to show 2.1 kg. [1]

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Examiner Only	
Marks	Remark

2 **(a)** Mae's basic rate of pay is £7.90 per hour. On Saturday she gets $1\frac{1}{2}$ times her basic rate of pay.
Mae worked 20 hours altogether from Monday to Friday and 4 hours on Saturday.
Calculate Mae's pay for the week.

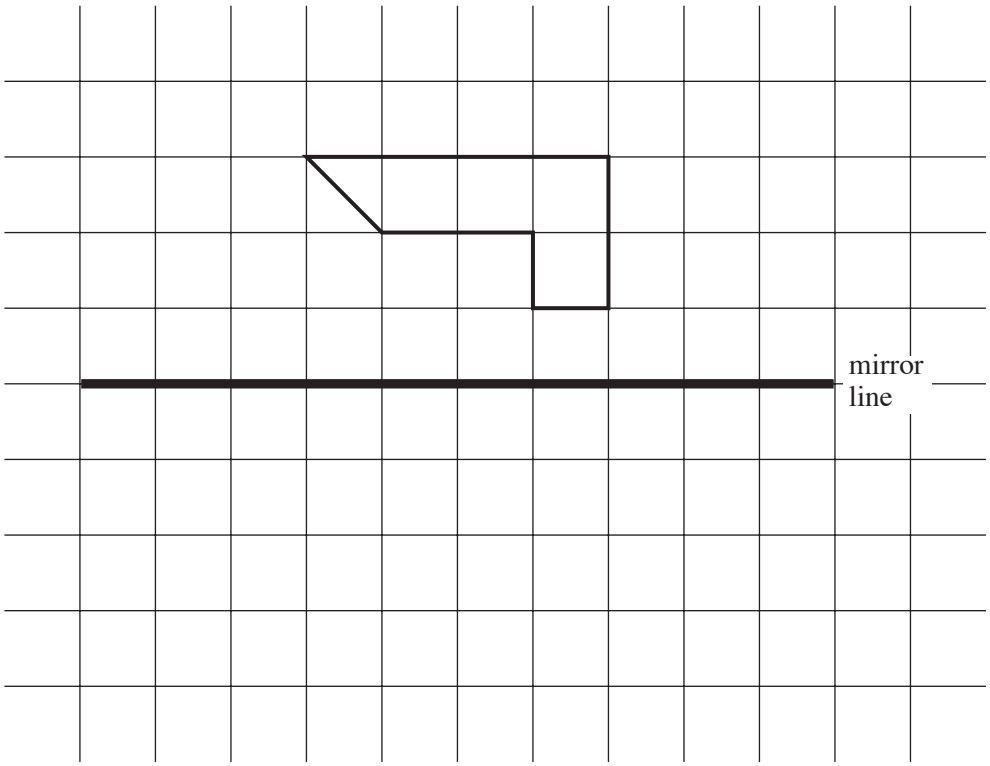
Answer £ _____ [4]

(b) That same week Joe worked 6 hours each day on Tuesday, Wednesday, Thursday and Friday. Joe earns £8.50 per hour.
Who earned more and by how much?

Answer _____ earned _____ more [3]

---

3 **(a)** Draw the reflection of the shape in the mirror line. [2]

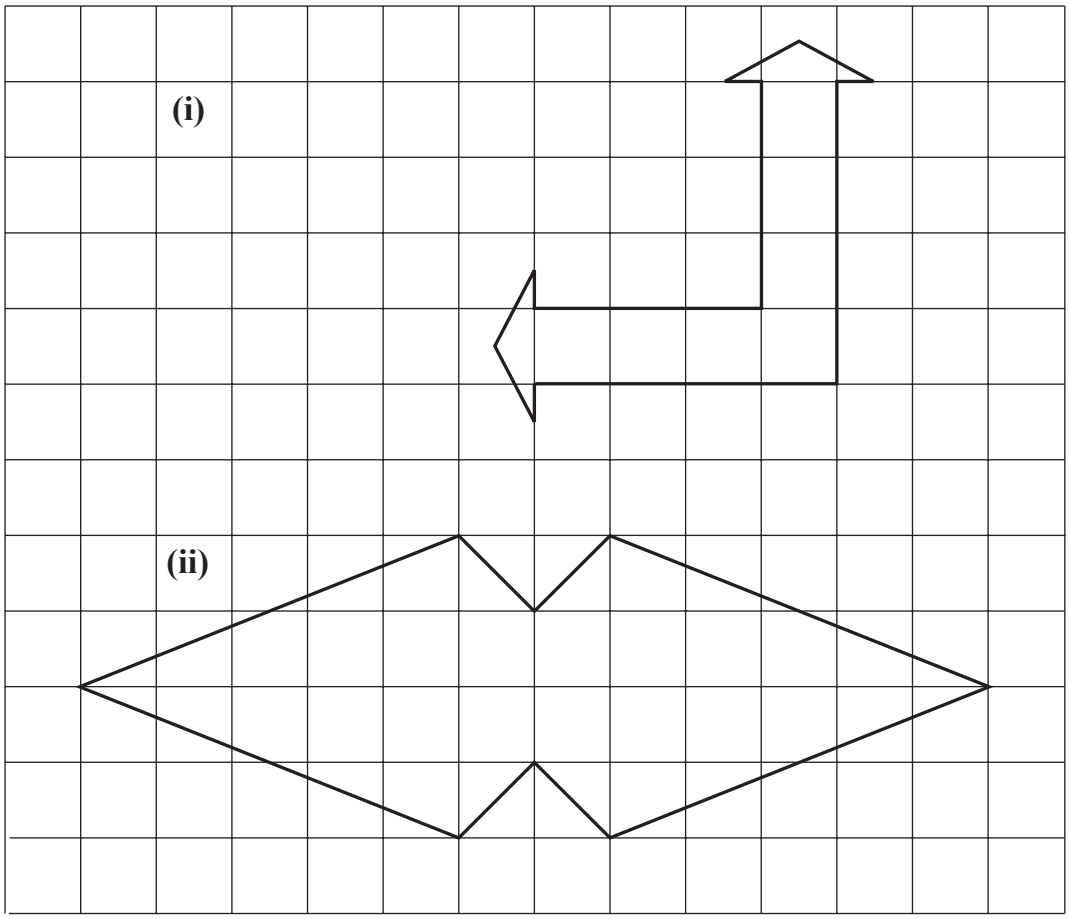


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(b) Draw all lines of symmetry on each of the shapes shown below.

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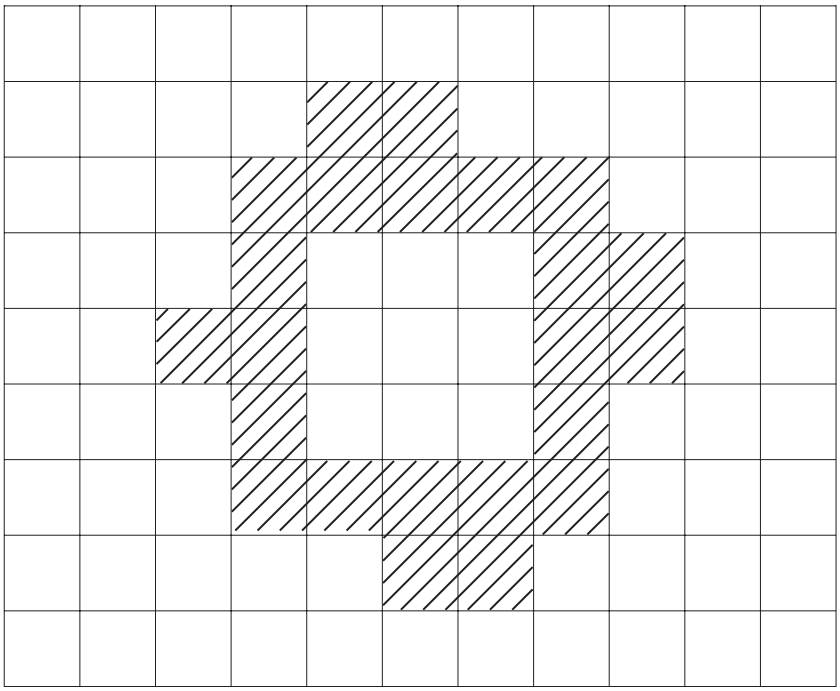
Marks	Remark



[1]

[1]

(c) Shade one square to give the figure below rotational symmetry.



[1]

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Examiner Only	
Marks	Remark

4 **(a)** The cost of hiring a Power Washer for a number of days from "Tools For U" is calculated using the formula

Hire Charge (£) = 25 + 45 × Number of Days

(i) Calculate the cost of hiring a Power Washer for 3 days.

Answer £ _____ [2]

(ii) What is the maximum number of days you could hire the Power Washer for if you had £300?

Answer _____ [2]

(b) The mean "M" of two numbers X and Y can be calculated using the formula

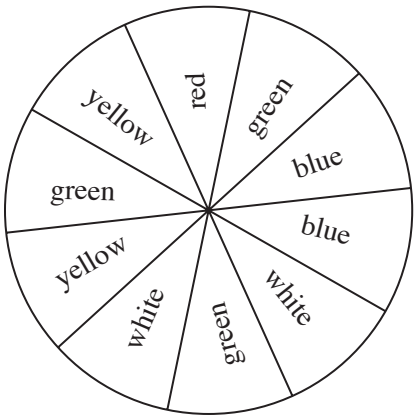
$$M = \frac{X + Y}{2}$$

Calculate M when X = 4.6 and Y = 6.2

Answer _____ [2]

Examiner Only	
Marks	Remark

5 (a)



Which colour is the spinner

(i) least likely to land on?

Answer _____ [1]

(ii) most likely to land on?

Answer _____ [1]

(b) 100 tickets numbered from 1 to 100 were sold in a raffle. Calculate the probability that a ticket numbered more than 40 will win the first prize.

Answer _____ [2]

(c) A bag contains 21 discs with a letter written on each of them. 9 have the letter A, 7 have the letter G and 5 have the letter W.

One disc is selected at random.

Calculate, in its simplest terms, the probability that it has the letter A.

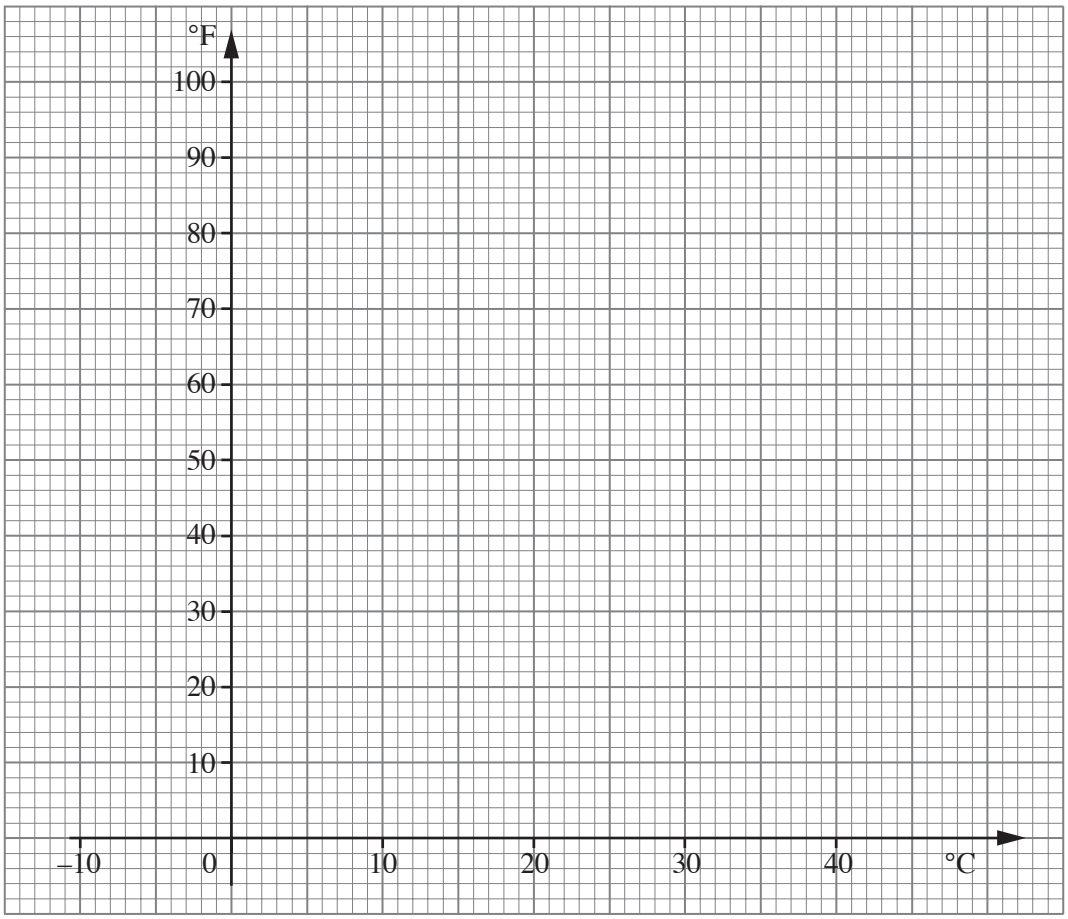
Answer _____ [2]

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6 CONVERSION TABLE FROM CENTIGRADE (ºC) TO FAHRENHEIT (ºF)

ºC	–5	0	5	10	15	20	25	30	35	40
ºF	23	32	41	50	59	68	77	86	95	104

(a) Draw the conversion graph below. [3]



(b) Use your graph to convert

(i) 28 ºC to ºF

Answer _____ ºF [1]

(ii) 55 ºF to ºC

Answer _____ ºC [1]

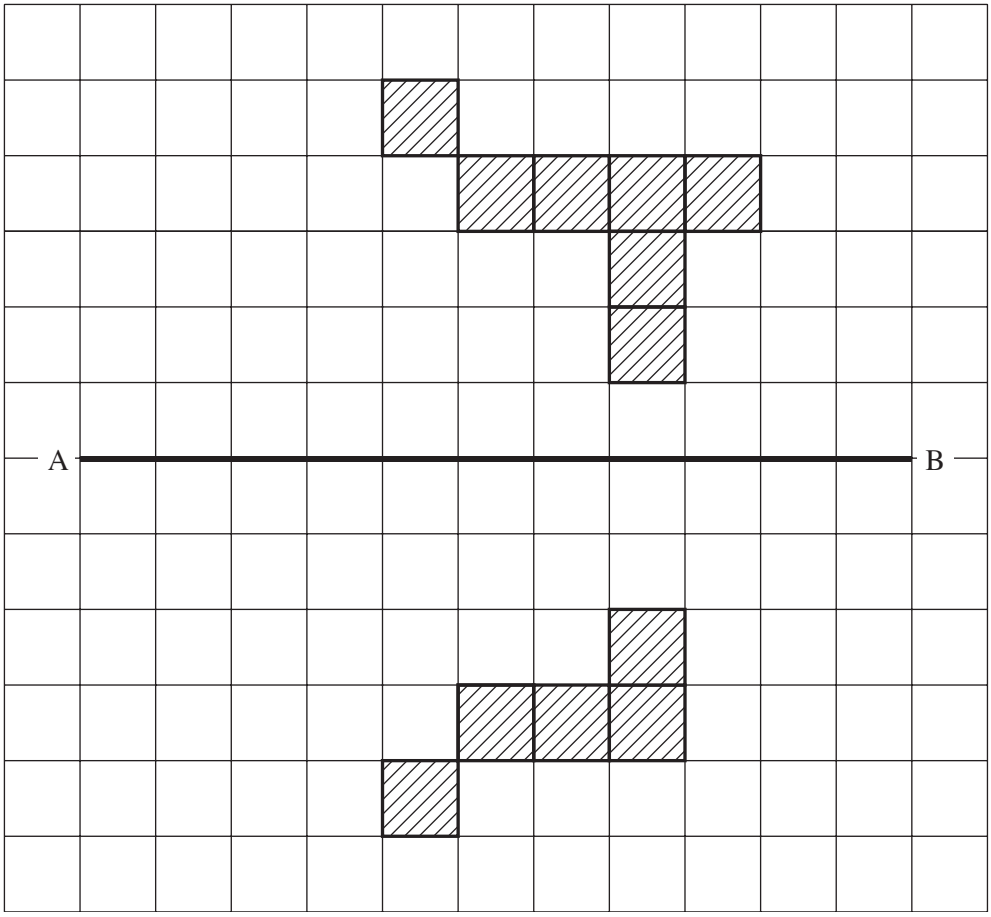
Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

7 **(a)** Shade **two** squares on the diagram below so that AB is a line of symmetry.



[2]

(b)

M A T H S

From the letters in the word above, choose

(i) a letter with no lines of symmetry. Answer _____ [1]

(ii) a letter with rotational symmetry of order 2. Answer _____ [1]

(c) The complete word below has one horizontal line of symmetry as shown.

C O D

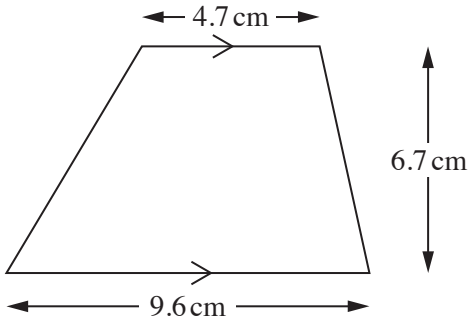
Write down another **three letter word** which has one horizontal line of symmetry.

Answer _____ [1]

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Examiner Only	
Marks	Remark

8



Find the area of this trapezium.
Give your answer to an appropriate degree of accuracy.

Answer _____ cm^2 [3]

9 **(a)** Calculate the amount of an investment of £7200 at 4.5% simple interest per year after 2 years.

Answer £ _____ [3]

(b) A car costs 1.5 million yen in Japan.

If one euro = 135.457 yen, calculate the cost of the same car in euro.

Give your answer to the nearest euro.

Answer _____ euro [3]

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Examiner Only

Marks	Remark

10 The table below shows some of the probabilities of getting a colour on a spinner with four colours.

Colour	Red	Blue	Green	Black
Probability	0.3	0.5	0.14	

Calculate the probability of getting

(a) Black,

Answer _____ [2]

(b) Green or Blue.

Answer _____ [2]

11 Using ruler and compasses only, construct the perpendicular bisector of the line PQ.
Show your construction lines.



[2]

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12 The angles in a triangle are in the ratio of 4 : 5 : 6

Work out the sum of the two smaller angles.

Answer _____ ° [3]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
January 2011

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

FRIDAY 14 JANUARY

10.45 am – 11.45 am

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STEMUP.CO.UK

GCSE MATHEMATICS JANUARY 2011

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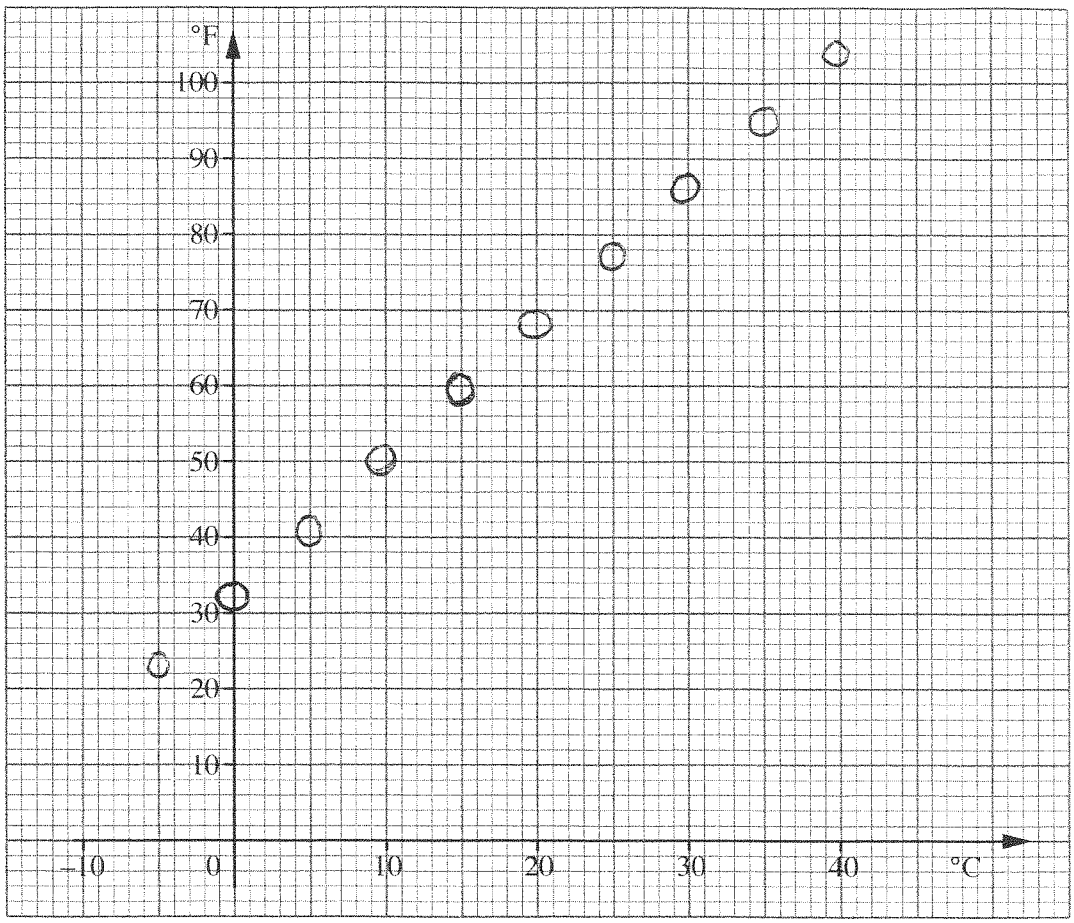
				AVAILABLE MARKS
1	**(a)**	115	A1	
	(b)	–7	A1	
	(c)	**(i)** 700	A1	
		(ii) correct arrow drawn	A1	4
2	**(a)**	$20 \times £7.90 = £158$	MA1	
		$4 \times 1\frac{1}{2} \times £7.90 = £47.40$	M1 A1	
		Total $= £205.40$	MA1	
	(b)	$6 \times 4 \times £8.50 = £204$	M1 A1	
		Answer Mae by £1.40	MA1	7
3	**(a)**	Correct reflection	A2	
	(b)	**(i)** 1 diagonal line of symmetry	A1	
		(ii) 1 horizontal and 1 vertical line of symmetry	A1	
	(c)	Correct square	A1	5
4	**(a)**	**(i)** $25 + 45 \times 3$	MA1	
		$= £160$	A1	
		(ii) $45d = 275$		
		$d = 275/45$	M1	
		$d = 6.111...$		
		6 days	A1	
	(b)	$M = \frac{4.6 + 6.2}{2} = 5.4$	M1 A1	6
5	**(a)**	**(i)** red	A1	
		(ii) green	A1	
	(b)	60 tickets win	M1	
		$\frac{60}{100}$	A1	
	(c)	$\frac{9}{21}$	MA1	
		$= \frac{3}{7}$	A1	6

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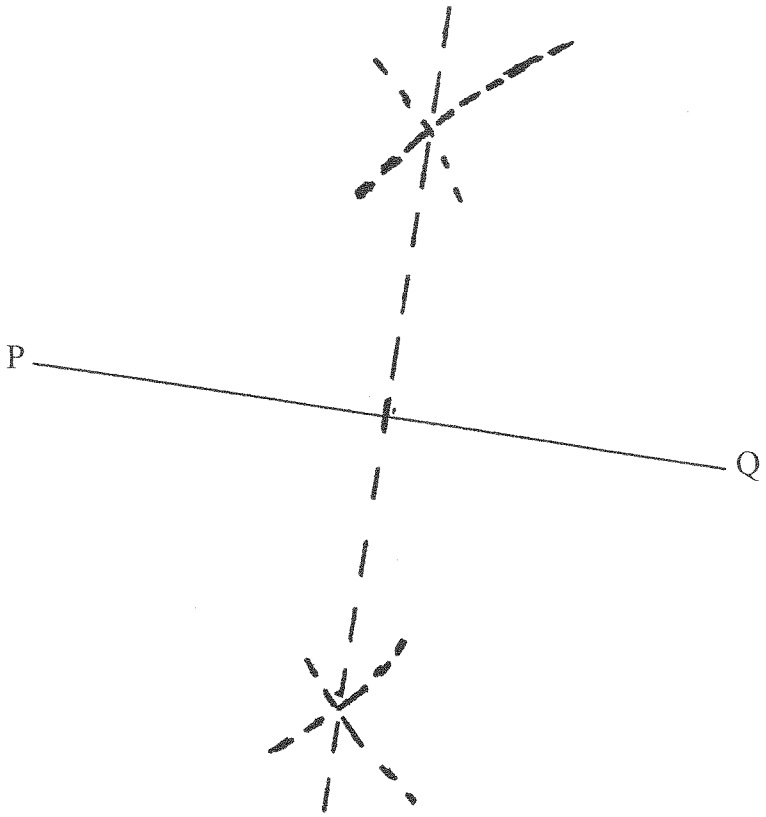
				AVAILABLE MARKS
6	**(a)**	points plotted A1 for 6 correct	A2	
		line drawn	A1	
	(b)	**(i)** 82 or 83	A1	
		(ii) 13	A1	5
7	**(a)**	2 correct squares shaded	A1 A1	
	(b)	**(i)** S	A1	
		(ii) H or S	A1	
	(c)	Any correct version e.g. HOB/DIE	A1	5
8		$\frac{1}{2}(9.6+4.7)\times 6.7$	MA1	
		$= 47.905$	A1	
		48	A1	3
9	**(a)**	$7200\times\frac{4.5}{100}=324$	MA1	
		$324 \times 2 = 648$	MA1	
		$7200 + 648 = 7848$	MA1	
	(b)	$1500000 \div 135.457$	MA1	
		$=11073.62484 \cong 11074$	A1 A1	6
10	**(a)**	P(Black) = 1 – (0.3 + 0.5 + 0.14)	M1	
		= 0.06	A1	
	(b)	P(Green or blue) = 0.14 + 0.5	M1	
		= 0.64	A1	4
11		Perpendicular bisector constructed	M1 A1	2
12		180 ÷ 15 = 12	MA1	
		48 + 60 = 108	M1 A1	3
			Total	**56**

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GCSE MATHEMATICS JANUARY 2011
MODULE N5-2
OVERLAYS QUESTION 6



GCSE MATHEMATICS JANUARY 2011
MODULE N5-2
OVERLAYS QUESTION 11



Rewarding Learning

General Certificate of Secondary Education
2010

Centre Number

7	1			

Candidate Number

Mathematics



Module N5 Paper 2
(With calculator)
Foundation Tier

GMN52

[GMN52]

MONDAY 7 JUNE

2.45 pm – 3.45 pm

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Complete in blue or black ink. Pencil may be used in diagrams only.
Do not write with a gel pen.
Do not use correction fluid to correct errors in your answers.
Answer **all thirteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

INFORMATION FOR CANDIDATES

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

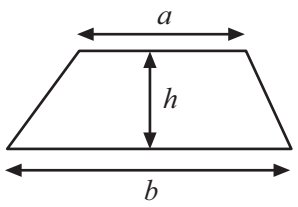
For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
Total Marks	

Examiner Number

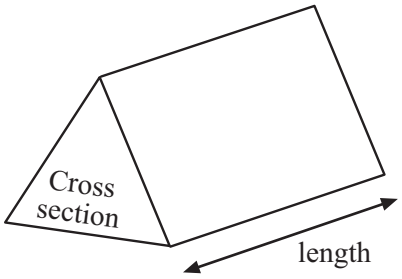
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Formula Sheet

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



Volume of prism = area of cross section × length

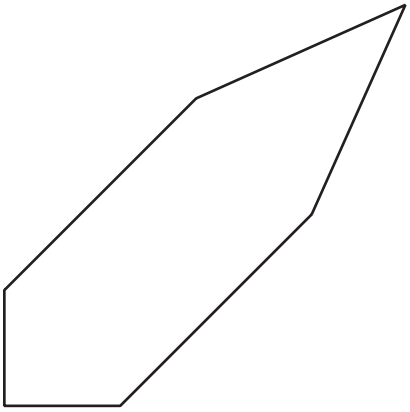


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Question 1

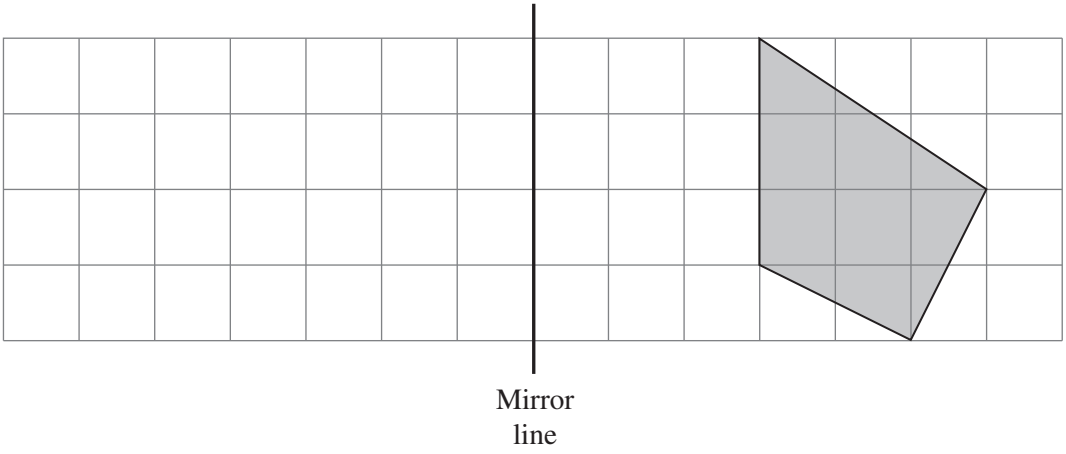
Examiner Only	
Marks	Remark

(a) Draw the line of symmetry on the shape below.



[1]

(b) Reflect the shape below in the mirror line.



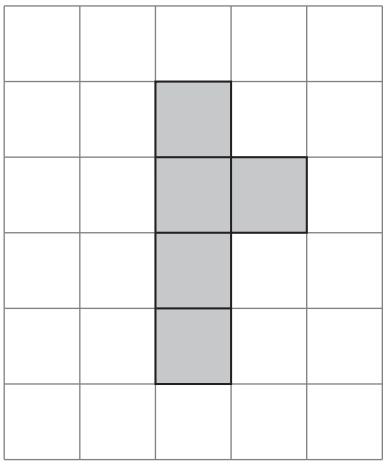
[2]

Question 1 continued

Examiner Only

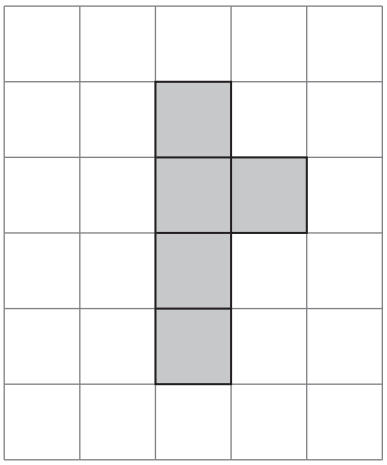
Marks	Remark

(c) (i) Shade one square to give this shape line symmetry.



[1]

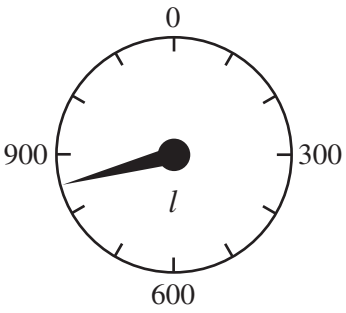
(ii) Shade one square (in a different position to **(i)**) to give this shape line symmetry.



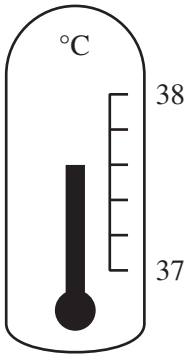
[1]

Question 2

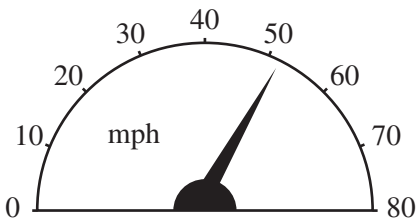
Examiner Only	
Marks	Remark



A



B



C

Match each scale to the correct statement.
Give the reading on the scale.

(a) the speed of a car Scale _____ Reading _____ [2]

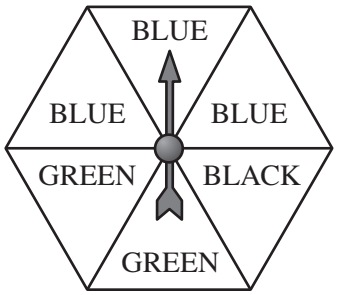
(b) the amount of oil in a tank Scale _____ Reading _____ [2]

(c) the temperature of a patient Scale _____ Reading _____ [2]

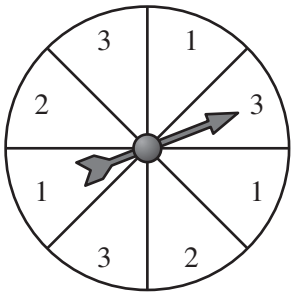
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Question 3

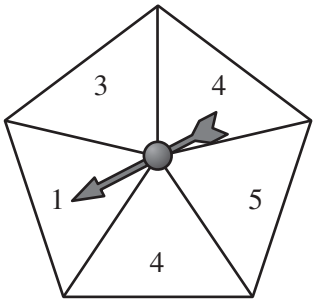
Examiner Only	
Marks	Remark



Spinner 1



Spinner 2



Spinner 3

Each spinner shown has equal sized sectors.
Complete the following:

(a) In Spinner 1, the colour least likely to occur is _____. [1]

(b) In Spinner 2, the probability of getting _____ or _____ is the same. [1]

(c) In Spinner 3, the probability of getting a _____ is greater than getting any of the other numbers. [1]

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Question 4

Examiner Only	
Marks	Remark

A watch costs £54.80
Jenny can buy it on mail order for 52 weekly payments of £1.30
How much extra would this cost?

Answer £ _____ [3]

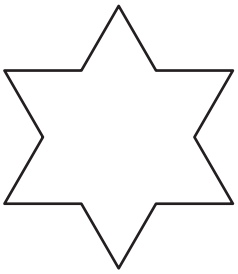
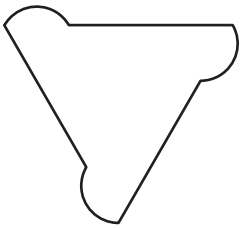
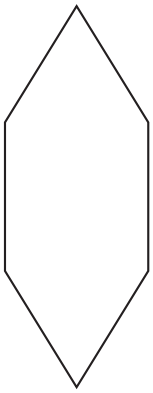
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Question 5

Examiner Only

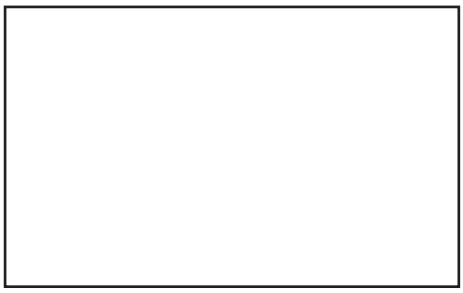
Marks	Remark

(a) Complete the table.

Shape			
Number of lines of symmetry			
Order of rotational symmetry			

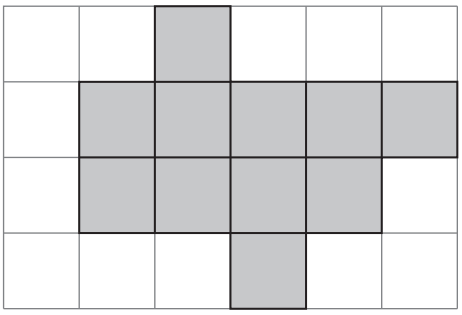
[6]

(b) The diagram shown is a rectangle.



Draw all the lines of symmetry on the rectangle. [2]

(c) Shade one square to give the shape below rotational symmetry of order 2



[1]

Question 6

Examiner Only	
Marks	Remark

Circle either Possible or Impossible for each of the following statements.

(a) The probability that John will fail his French test is $\frac{6}{5}$

Possible Impossible [1]

(b) The probability that a battery will last less than 10 hours is 0.65

Possible Impossible [1]

(c) The probability that it will rain in the summer is –0.65

Possible Impossible [1]

Question 7

Examiner Only	
Marks	Remark

The total cost of a TV is given by the formula

Total cost = deposit + monthly payment × 6

(a) Ann pays a deposit of £250 and her monthly payment is £50
Find the total cost of her TV.

Answer £_____ [2]

(b) Mark pays no deposit and his monthly payment is £80
What is the total cost of Mark's TV?

Answer £_____ [1]

(c) In your own words, explain what the 6 in the formula stands for.

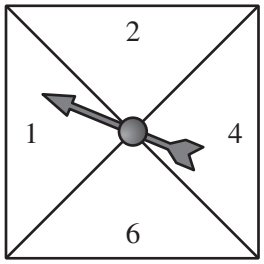
Answer _____ [1]

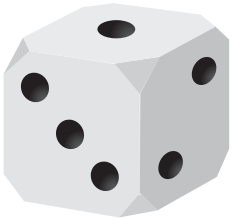
(d) The total cost of David's TV is £800 and his deposit is £380
Work out David's monthly payment.

Answer £_____ [3]

Question 8

Examiner Only	
Marks	Remark





The spinner is spun and the dice is thrown.

(a) Complete this table of outcomes.

Spinner

Dice	1	2	4	6
1				
2				
3				
4				
5				
6				

[2]

(b) What is the probability that the score on the dice is greater than the score on the spinner?

Answer _____ [2]

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Question 9

Examiner Only	
Marks	Remark

(a) Joe converts €47 500 to £ when the exchange rate is £1 = €1.25
How many £ should he receive?

Answer £_____ [2]

(b) Julie earns £42 000 per year. Her tax free allowance is £5000
She pays 22% of the remaining salary in tax.
How much of her salary is left after tax has been deducted?

Answer £_____ [3]

Question 10

Examiner Only	
Marks	Remark

Which of 'always even', 'always odd', 'could be odd or even' describes the number $5(2n + 3)$? (n is an integer).
Explain your answer.

Answer _____

because _____

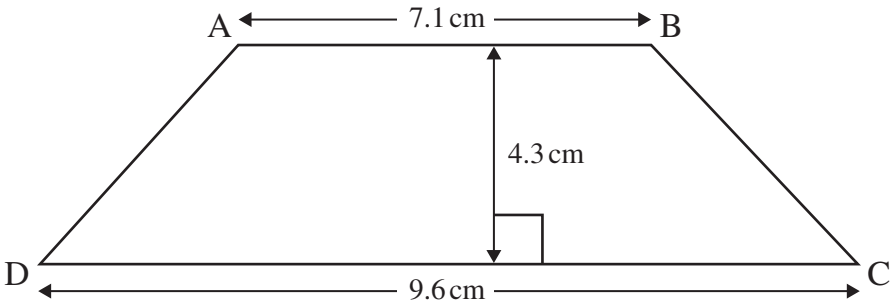
_____ [2]

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Question 11

Examiner Only	
Marks	Remark

ABCD is a trapezium.
Calculate the area of ABCD.



Give your answer to an appropriate degree of accuracy.

Answer _____ cm^2 [3]

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Question 12

Examiner Only	
Marks	Remark

Maurice travels 99 km.
His journey is split between train and taxi in the ratio 11 : 4
How far does he travel by taxi?

Answer _____ km [2]

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Question 13

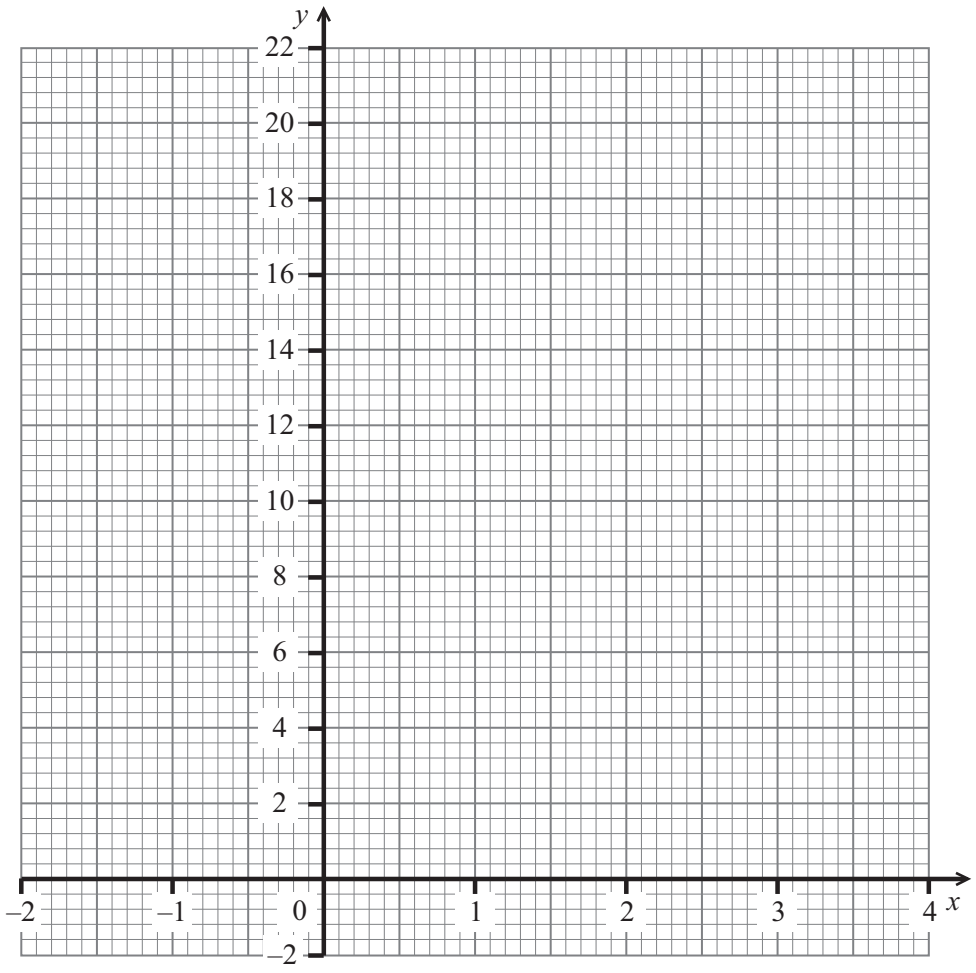
Examiner Only	
Marks	Remark

(a) Complete the table for $y = 2x^2 - 5x + 3$

x	–2	–1	0	1	2	3	4
y		10	3	0	1		15

[2]

(b) Draw the graph of $y = 2x^2 - 5x + 3$ for $x = -2$ to $x = 4$ on the axes below.



[2]

5570 **THIS IS THE END OF THE QUESTION PAPER**

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19



GCSE

Mathematics (Modular)

Summer 2010

Mark Schemes

Issued: October 2010

STEMUP.CO.UK

General Certificate of Secondary Education
2010

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

MONDAY 7 JUNE

2.45 pm – 3.45 pm

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2010

Introduction

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

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

M indicates marks for correct method.

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

MA indicates marks for combined method and accurate working.

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

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

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

Positive marking:

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

Some common examples of this occur in the following cases:

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

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

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

			AVAILABLE MARKS
1	**(a)** line	A1	
	(b) reflection (allow [A1], wrong line)	A2	
	(c) **(i)** square	A1	
	(ii) square	A1	5
2	**(a)** C 52 mph	A1, A1	
	(b) A 850 *l*	A1, A1	
	(c) B 37.6°C	A1, A1	6
3	**(a)** Black	A1	
	(b) 1 or 3	A1	
	(c) 4	A1	3
4	$52 \times 1.30 = 67.60$ extra £12.80	M1, A1 MA1	3
5	**(a)**	A6	
	(b) Horizontal line in correct position Vertical line in correct position	A1 A1	
	(c) shaded square	A1	9
6	**(a)** Impossible	A1	
	(b) Possible	A1	
	(c) Impossible	A1	3

6	0	2
6	3	2

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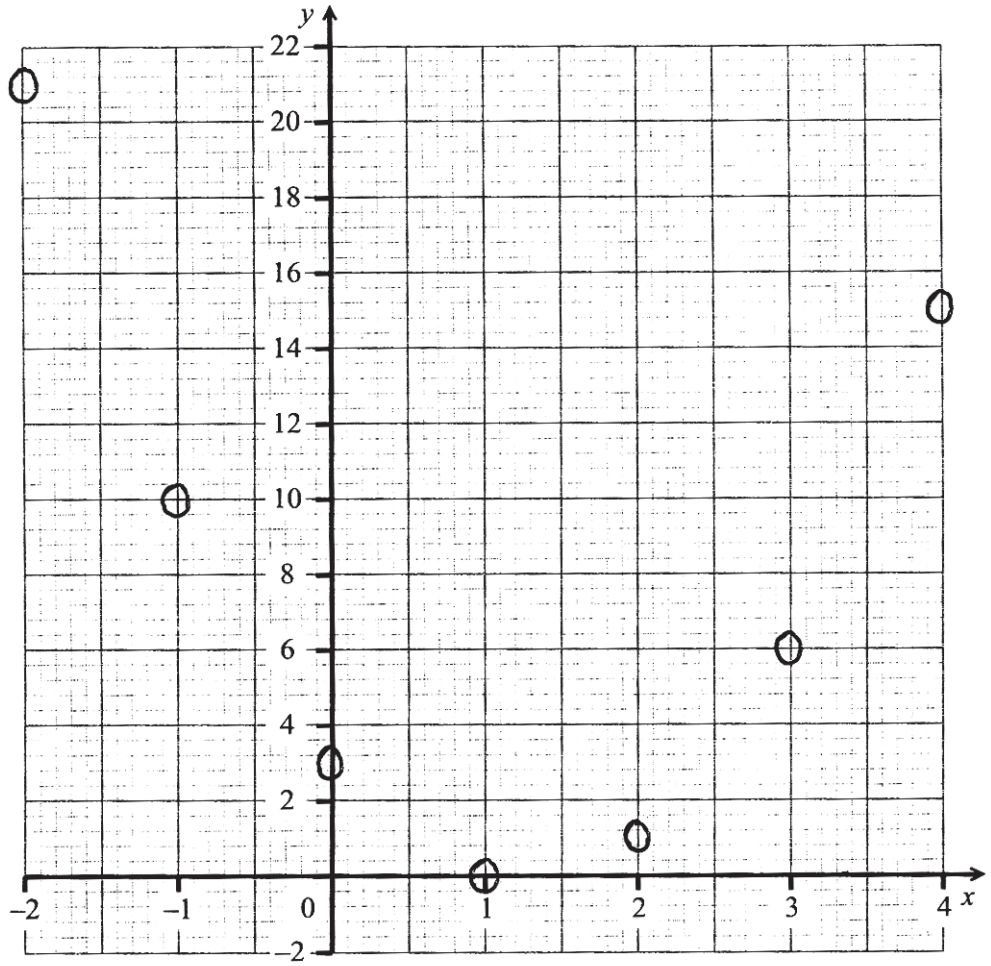
				AVAILABLE MARKS
7	**(a)**	$250 + 50 \times 6$	MA1	
		550	A1	
	(b)	480	A1	
	(c)	number of payments (months)	A1	
	(d)	$800 - 380 = 420$	MA1	
		$420 \div 6$	M1	
		70	A1	7
8	**(a)**	Table of paired outcomes	24 pairs MA2 (18 pairs MA1)	
	(b)	11/24	MA2	4
9	**(a)**	$47500 \div 1.25$	M1	
		= £38000	A1	
	(b)	$42000 - 5000 = 37000$	MA1	
		22% of 37000 = £8140	MA1	
		$42000 - 8140$ = £33860	MA1	5
10		always odd	A1	
		$2n$ is always even, therefore $2n + 3$ is always odd and 5 (or an odd) times an odd number is always odd **or** $10n + 15$, $10n$ is even and even + 15 is always odd	A1	2
11		Area = $\frac{1}{2}$ $(7.1 + 9.6) \times 4.3$	MA1	
		= 35.905	A1	
		Answer 36 **or** 35.9	A1	3
12		$99 \div 15 = 6.6$	MA1	
		$6.6 \times 4 = 26.4$	MA1	2

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			AVAILABLE MARKS
13	**(a)** 21, 6	A2	
	(b) See overlay		
	correct points	A1	
	smooth curve	A1	4
		Total	**56**

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GCSE MATHEMATICS SUMMER 2010
MODULE N5-2
OVERLAY QUESTION 13



Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education
January 2010

Mathematics



Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

GMN52

FRIDAY 15 JANUARY

10.45 am – 11.45 am

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

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

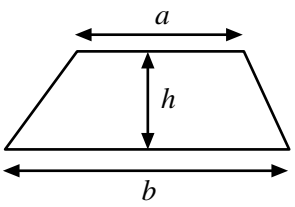
INFORMATION FOR CANDIDATES

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

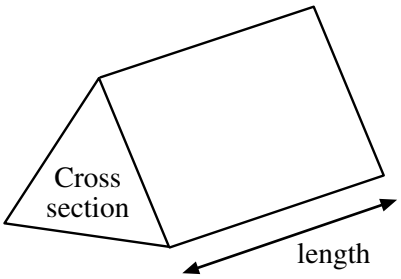
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Formula Sheet

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



Volume of prism = area of cross section × length

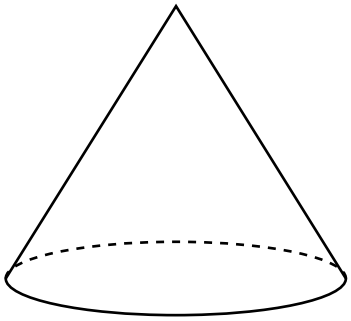


1 Choose from the following to name the solids below.

Examiner Only	
Marks	Remark

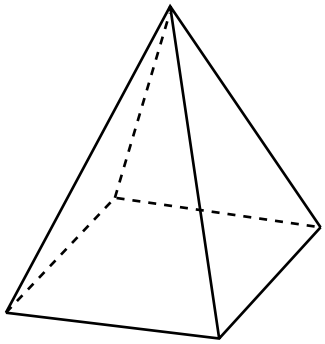
Cylinder	Cone	Triangle	Sphere
Triangular prism	Rectangle	Pyramid	

(a)



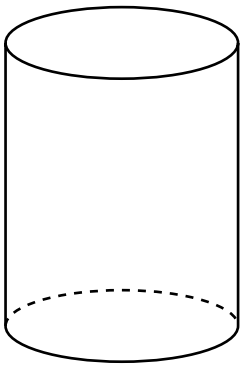
Answer _____ [1]

(b)



Answer _____ [1]

(c)



Answer _____ [1]

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Examiner Only	
Marks	Remark

2 A plumber prices a job using the formula

Total price = call-out charge + rate per hour × number of hours job takes to complete.

(a) If the call-out charge is £60 and he charges £45 for each hour he works, use the formula to work out the total price of a job which takes three hours to complete.

Answer £ _____ [2]

(b) The same plumber prices another job at £285
Work out how many hours he expects this job will take to complete.

Answer _____ hours [2]

---

3 **(a)** Jim is paid £6 per hour for 30 hours work from Monday to Friday and double the hourly rate for four hours on Saturday.
How much does he earn for the week's work?

Answer £ _____ [3]

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(b) John works the same hours as Jim.
His rate is £7.26 per hour from Monday to Friday and 'time and a half' on Saturday.
How much **more** does he earn per week?

Answer £ _____ [5]

Examiner Only

Marks	Remark

---

4 Classify the probability of the following events as

certain, **impossible**, **evens**, **unlikely** or **likely**

(a) April will have 31 days.

Answer _____ [1]

(b) Someone you know will win the National Lottery jackpot.

Answer _____ [1]

(c) The sun will rise tomorrow.

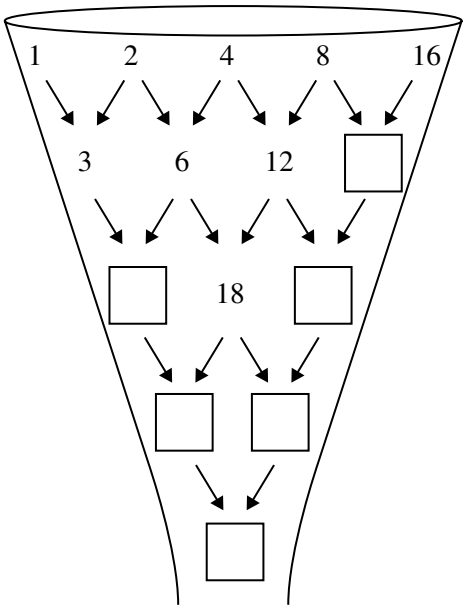
Answer _____ [1]

(d) A tossed coin will show heads.

Answer _____ [1]

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5 Complete the pattern below.



[3]

6 The distance between two towns is 24 kilometres. How many miles is this?

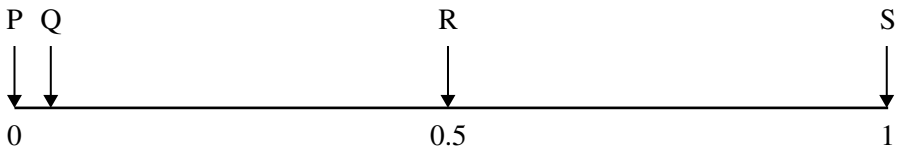
Answer _____ miles [2]

Examiner Only	
Marks	Remark

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Examiner Only	
Marks	Remark

7 A probability scale is drawn below.



(a) What one word can be used to describe the probability at

(i) Q, Answer _____ [1]

(ii) S? Answer _____ [1]

(b) Event T is 'a dice is thrown and shows a number greater than 1'
Event U is 'a month in the year selected at random begins with the letter J'

Indicate with arrows and labels event T and event U on the probability scale above. [2]

---

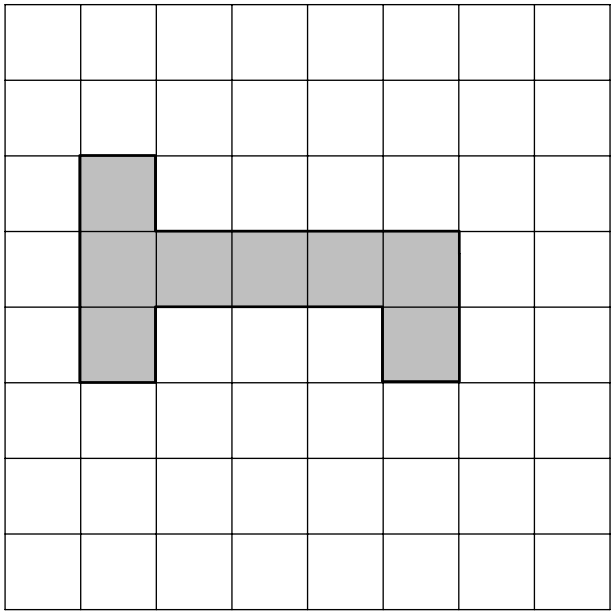
8 Use the formula $F = 7m + 5n$ to work out the value of F when $m = 8$ and $n = 9$

Answer F = _____ [2]

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Examiner Only	
Marks	Remark

9 **(a)** Add one square to the following diagram so that the complete shape has rotational symmetry of order 2



[1]

(b) What six-sided shape has rotational symmetry of order 6?

Answer _____ [1]

(c) Name two four-sided shapes with rotational symmetry of order 2

Answer _____, _____ [2]

---

10 Jean buys £800 worth of euro at the rate of €1.234 = £1 for a city break in Paris. She spends $\frac{3}{4}$ of her euro and changes the rest at the rate of €1.323 = £1.
How much should she receive?
Give your answer to the nearest penny.

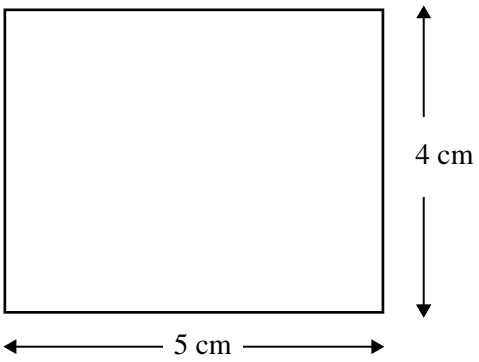


É www.aviewoncities.com/img/paris/kvefr1243s.jpg

Answer £ _____ [3]

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11 (a)

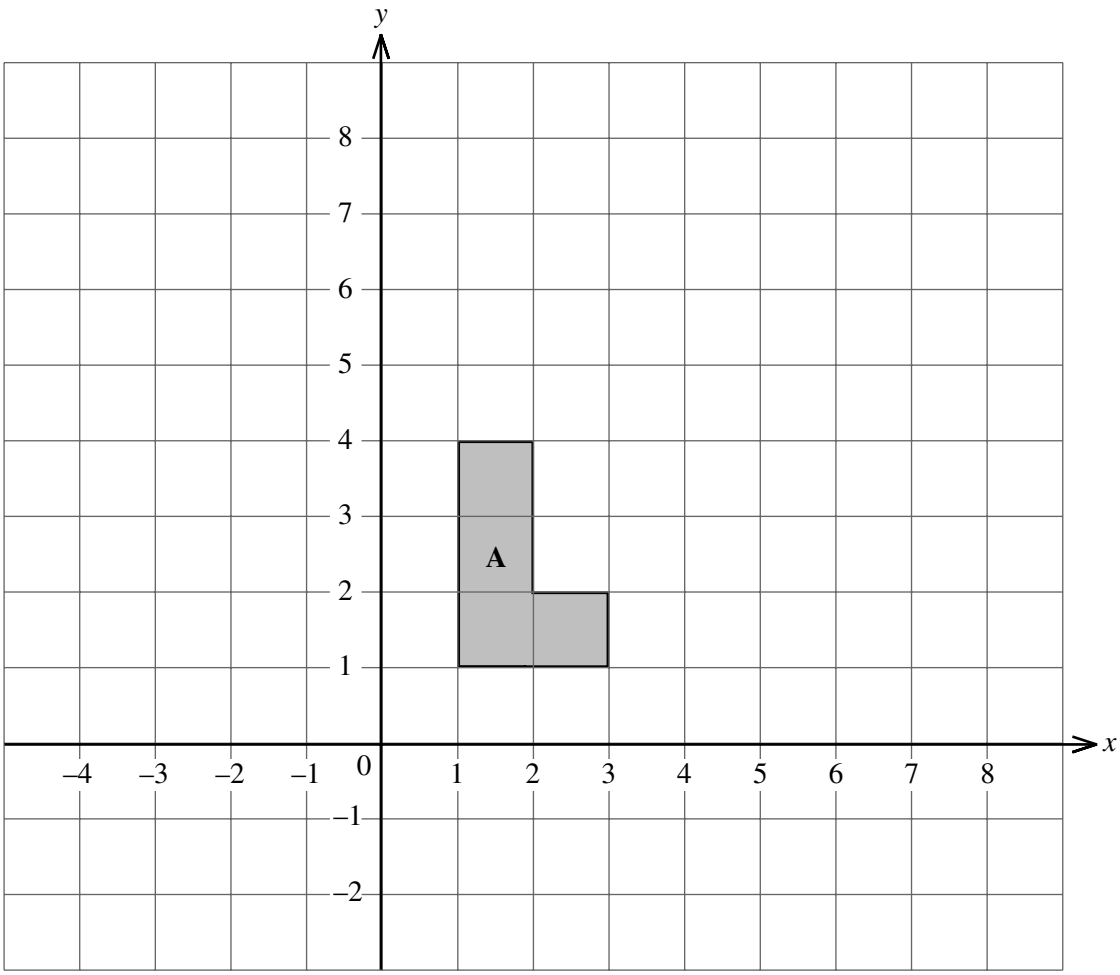


The rectangle is to be enlarged by a scale factor of 3.

Write down the measurements of the enlarged rectangle.

Answer _____ cm, _____ cm [2]

(b) Enlarge the shape A by scale factor 2, from the centre C (–1, 2).



[3]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

12 A box contains 6 red, 4 black and 10 blue pens.
A girl selects a pen at random.
What is the probability that the girl selects a black pen?

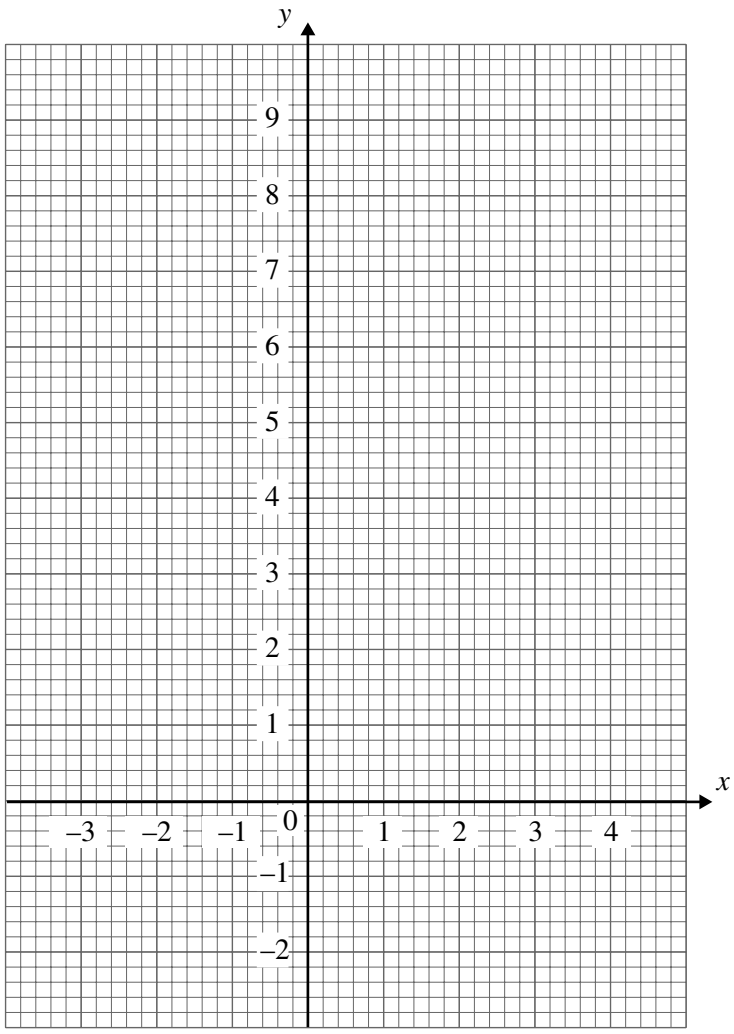
Answer _____ [2]

13 **(a)** Complete the table below for the curve $y = x^2 - 1$

x	–2	–1	0	1	2	3
y	3		–1	0	3	8

[1]

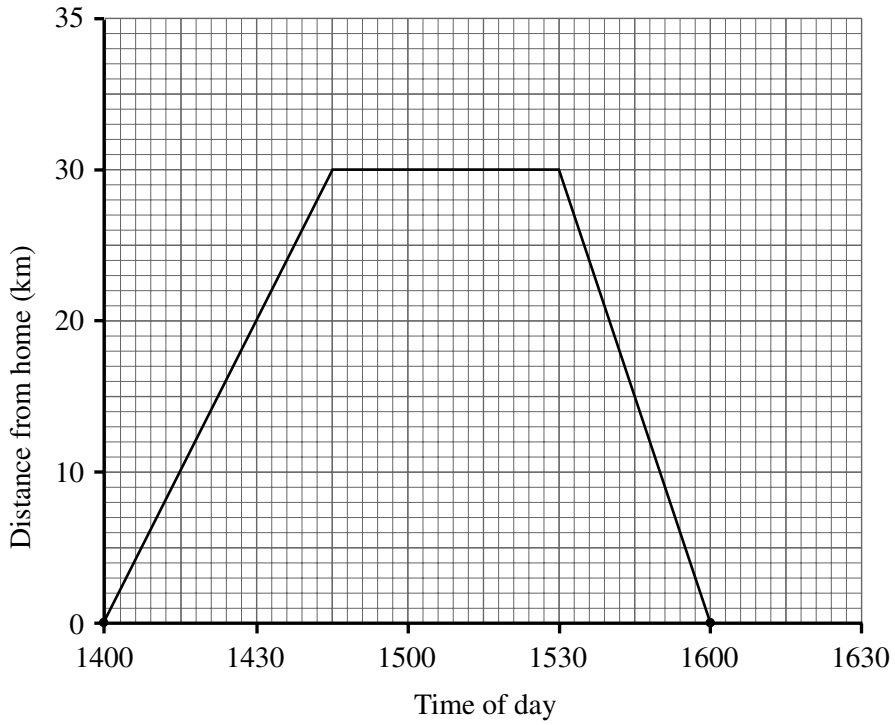
(b) Hence draw the graph of $y = x^2 - 1$ on the grid below.



[2]

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14 Seamus drove from his home to the airport to collect his daughter.
He waited for her to arrive and then he drove home.
Here is a distance–time graph for his complete journey.



(a) For how many minutes did Seamus have to wait at the airport?

Answer _____ minutes [1]

(b) Work out his average speed on his journey **to** the airport.
Give your answer in kilometres per hour.

Answer _____ km/h [2]

Examiner Only

Marks	Remark

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Examiner Only	
Marks	Remark

15 

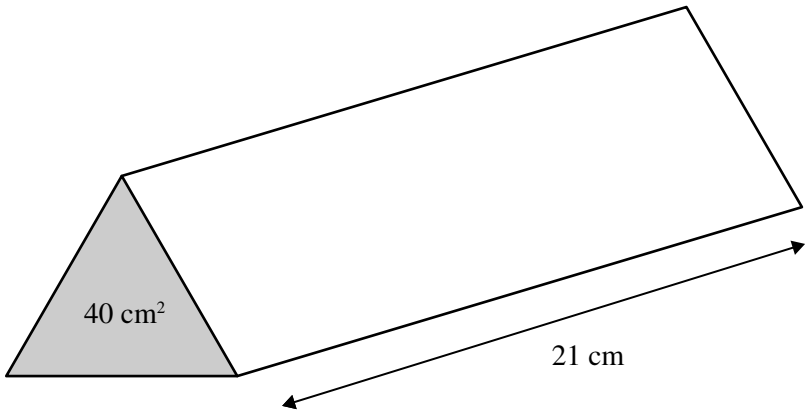
© *Oceania Cruise Line*

A cruise ship carries fuel in three tanks whose capacities are in the ratio 3 : 5 : 6
The capacity of the smallest tank is 162 000 gallons. Calculate the total capacity of the three tanks.

Answer _____ gallons [2]

---

16 A solid triangular prism of mass 7900 g has a cross-section area of 40 cm^2 and length 21 cm.



Calculate the density of the prism.

Give your answer to an appropriate degree of accuracy.

Answer _____ g/cm^3 [4]

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THIS IS THE END OF THE QUESTION PAPER

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1312-049-1

GCSE

Mathematics (Modular)

January 2010

Mark Schemes

Issued: April 2010

Rewarding Learning

General Certificate of Secondary Education
January 2010

Mathematics

Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

FRIDAY 15 JANUARY

10.45am – 11.45am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2010

Introduction

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

				AVAILABLE MARKS
1	**(a)**	Cone	A1	
	(b)	Pyramid	A1	
	(c)	Cylinder	A1	3
2	**(a)**	$60 + 45 \times 3$	MA1	
		195	A1	
	(b)	$285 - 60 = 225$	MA1	
		5 hours	A1	4
3	**(a)**	$6 \times 30 = 180$	MA1	
		$2 \times 6 \times 4 = 48$	MA1	
		Total 228	MA1	
	(b)	$30 \times 7.26 = 217.80$	MA1	
		$7.26 \times 4 \times 1.5 = 43.56$	MA2	
		Total 261.36	MA1	
		Answer 33.36	MA1	8
4	**(a)**	impossible	A1	
	(b)	unlikely	A1	
	(c)	certain	A1	
	(d)	evens	A1	4
5		24 9 36 27 54 81	MA3	3
		(Award 1 for 2 correct, 2 for 4 correct)		

			AVAILABLE MARKS
6	$24 \div 8 = 3$ **or** 8 km = 5 miles	MA1	
	$3 \times 5 = 15$	MA1	2
7	**(a)** **(i)** unlikely	A1	
	(ii) certain	A1	
	(b) T labelled approximately $\frac{5}{6}$ of scale	A1	
	U labelled approximately $\frac{1}{4}$ of scale	A1	4
8	$56 + 45$	MA1	
	$= 101$	A1	2
9	**(a)** Correct square	A1	
	(b) Regular hexagon	A1	
	(c) Parallelogram, rectangle, rhombus (any **two**)	A1, A1	4
10	$800 \times 1.234 = €987.20$	MA1	
	Euro left $\frac{1}{4} \times 987.20 = €246.80$	MA1	
	Amount in £'s $246.80 \div 1.323 = 186.55$	MA1	3
11	**(a)** 15	A1	
	12	A1	
	(b) Correct centre	A1	
	Correct enlargement (Award 1 mark for 4 points correct)	A2	5
12	Total = 20	MA1	
	Probability = $\frac{4}{20}$ **or** $\frac{1}{5}$	A1	2

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				AVAILABLE MARKS
13	**(a)**	0	A1	
	(b)	Points plotted correctly	A1	
		Smooth curve through points	A1	3
14	**(a)**	45	A1	
	(b)	30 ÷ 0.75	MA1	
		40 km/hr	A1	3
15		162 000 ÷ 3 = 54 000	MA1	
		54 000 × 14 = 756 000	MA1	2
16		40 × 21 = 840	A1	
		7900 ÷ 840 = 9.40476	M1, A1	
		9.4 or 9	A1	4
			Total	**56**

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Rewarding Learning

Centre Number	
71	

Candidate Number

General Certificate of Secondary Education

2009

Mathematics



Module N5 Paper 2
(With calculator)
Foundation Tier

[GMN52]

GMN52

MONDAY 1 JUNE

10.45 am – 11.45 am

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

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

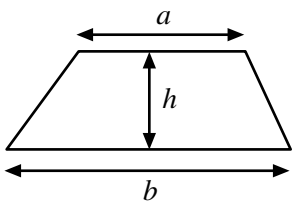
INFORMATION FOR CANDIDATES

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

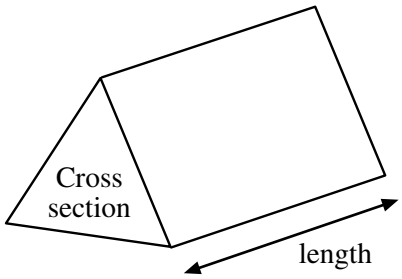
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Formula Sheet

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

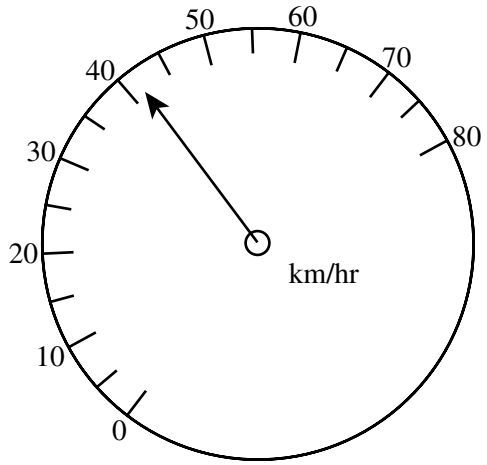


Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

1



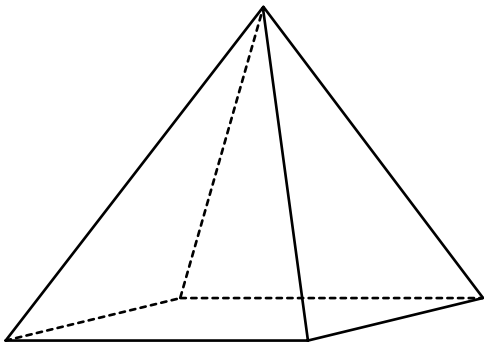
(a) Write down the reading on the speedometer.

Answer _____ km/hr [1]

(b) Indicate with an arrow a reading of 55 km/hr. [1]

---

2 This diagram shows a square based pyramid.



(a) How many edges does the pyramid have?

Answer _____ [1]

(b) How many faces does the pyramid have?

Answer _____ [1]

(c) How many congruent faces does the pyramid have?

Answer _____ [1]

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Examiner Only	
Marks	Remark

3 Each week Mr Jubal earns 45p commission on each ticket he sells for the first 200 tickets and 60p per ticket for any extra tickets he sells.
Last week he sold 280 tickets. How much did he earn?

Answer £_____ [4]

---

4 The formula used to calculate the weekly wage of a car salesman is

Weekly wage = Basic wage + number of cars sold × bonus payment

The basic wage is £250 and a bonus of £45 is paid for every car sold in a week.
Use the formula to calculate his wage in a week when he sells 4 cars.

Answer £_____ [2]

---

5 Trudy buys a length of ribbon to make 24 badges each 5.6 cm long.

(a) What length of ribbon should she buy?

Give your answer to an appropriate degree of accuracy.

Answer _____ m [3]

(b) Explain why you chose this answer.

_____

_____ [1]

Examiner Only	
Marks	Remark

6 Malik selects a cube at random from a bag containing 7 red, 1 yellow and 5 white cubes.

What is the probability that Malik

(a) selects a yellow cube,

Answer _____ [1]

(b) does not select a yellow cube,

Answer _____ [1]

(c) selects a red cube or a yellow cube?

Answer _____ [2]

7 A rectangle has length L and breadth B.

(a) The perimeter of the rectangle is given by the formula $P = 2L + 2B$.

Calculate the perimeter when the length is 10 cm and the breadth is 4 cm.

Answer _____ cm [2]

(b) The area of the rectangle is given by the formula $A = LB$.

Calculate the area when the length is 10 cm and the breadth is 4 cm.

Answer _____ cm^2 [1]

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Examiner Only	
Marks	Remark

8 Danny wants to buy a TV priced at £899
On hire purchase he would pay £430 deposit and 40 weekly payments of £15.20
His sister offers to buy the TV for him if he pays her back £40 per month for two years.
How much less would he pay in total by the cheaper method?

Answer £_____ [6]

---

9 **(a)** Draw lines to match metric to imperial units.

centimetre	pound
metre	mile
kilometre	yard
gram	inch
kilogram	ounce

[3]

(b) A distance of 40 kilometres is approximately how many miles?

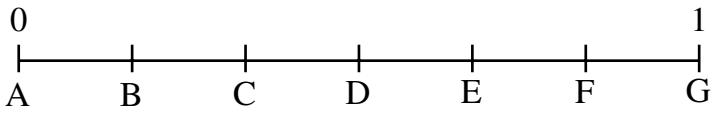
Answer _____ miles [2]

(c) A jug holds 7 pints of water when full. How many litres of water does the jug hold when full?

Answer _____ litres [2]

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10



A fair dice, marked 1, 2, 3, 4, 5, 6 is thrown.
Choose the letter on the probability scale which best matches

(a) the probability of a score of 3,

Answer _____ [1]

(b) the probability of a score of less than 3,

Answer _____ [1]

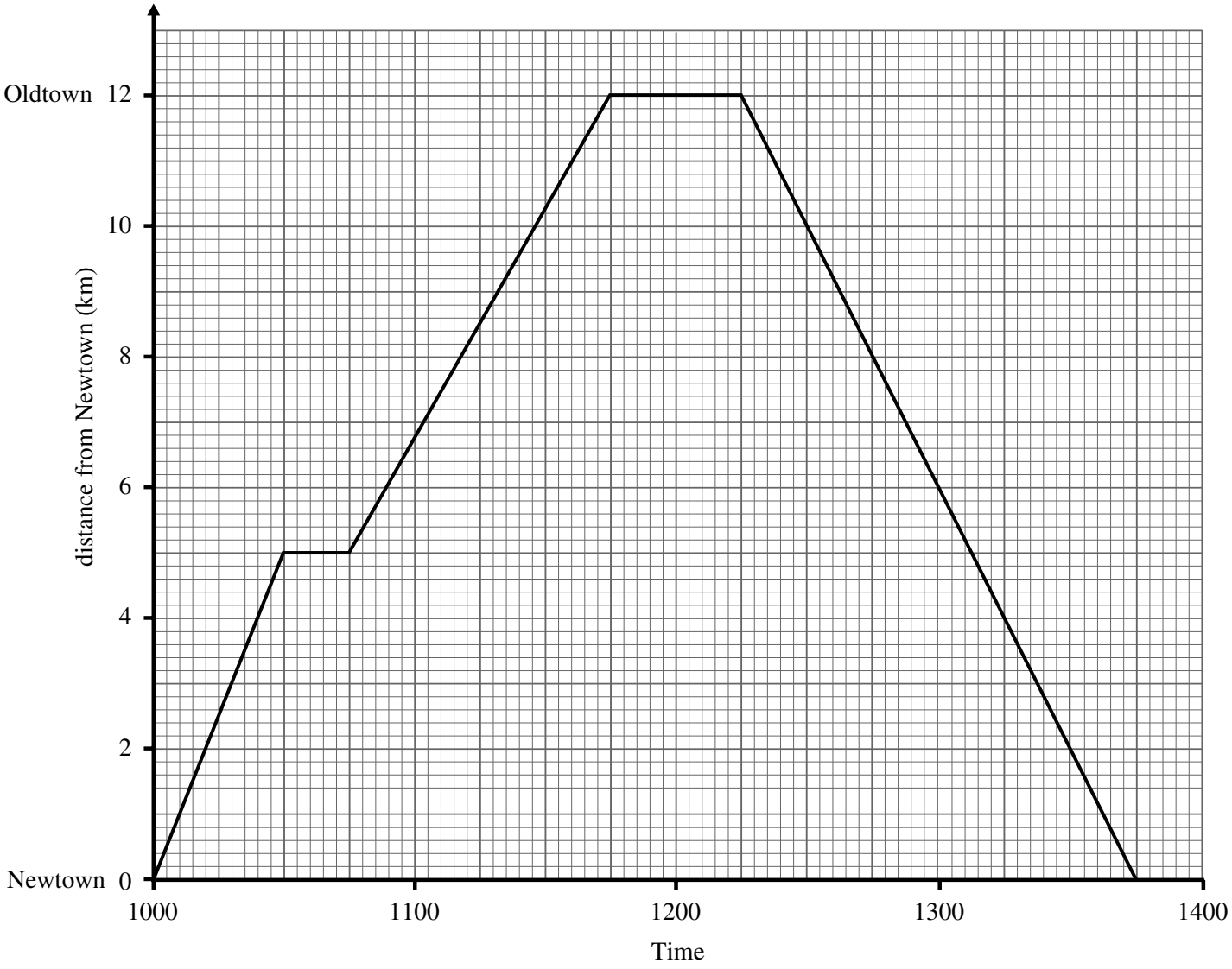
(c) the probability of a score of less than 8

Answer _____ [1]

Examiner Only	
Marks	Remark

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11 An athlete goes for a run from Newtown to Oldtown and back. His journey is illustrated on the graph.



Examiner Only	
Marks	Remark

(a) What is happening between 1030 and 1045?

Answer _____ [1]

(b) How far has the athlete run in total?

Answer _____km [1]

(c) What is the athlete's speed on the return journey from Oldtown to Newtown?

Answer _____km/hr [2]

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Examiner Only	
Marks	Remark

12 A four-sided spinner has the numbers 1, 3, 5, 7 written on it. The probability of getting each number is the same.
A fair dice has the numbers 2, 4, 6, 8, 10, 12 written on it.
In a game the spinner is spun and the dice rolled and their scores are added together.

(a) Use the two-way table to show all the outcomes for the sum of the two scores.

+	2	4	6	8	10	12
1						
3						
5						
7						

[2]

(b) What is the probability that the sum of the two scores is greater than 14?

Answer _____ [2]

13 A bag of 25 potatoes selected at random in a store has 4 bad potatoes.
How many potatoes are expected to be bad out of a bag of 200 potatoes?

Answer _____ [2]

Examiner Only	
Marks	Remark

14 To feed 30 people John makes

20 beef sandwiches
36 cheese sandwiches
52 ham sandwiches

How many of each would he need to make for 45 people?

Answer beef _____

cheese _____

ham _____ [3]

---

15 Simplify

(a) $t^3 \times t^3$

Answer _____ [1]

(b) $r^6 \div r^2$

Answer _____ [1]

---

16 £180 is divided between Lisa, Mikey and Richard in the ratio 8 : 1 : 6
How much does each get?

Answer Lisa £_____

Mikey £_____

Richard £_____ [3]

THIS IS THE END OF THE QUESTION PAPER

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GCSE

Mathematics (Modular)

Summer 2009

Mark Schemes

Issued: October 2009

Rewarding Learning

General Certificate of Secondary Education

2009

Mathematics

Module N5 Paper 2

(With calculator)

Foundation Tier

[GMN52]

MONDAY 1 JUNE

10.45 am – 11.45 am

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS 2009

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1	**(a)** 41	A1	
	(b) arrow	A1	2
2	**(a)** 8	A1	
	(b) 5	A1	
	(c) 4	A1	3
3	200 × 45p = £90 80 × 60p = £48 total £138	MA1 M1, A1 MA1	4
4	250 + 4 × 45 430	M1 A1	2
5	**(a)** 24 × 5.6 = 134.4 $1\frac{1}{2}$	M1, A1 (accuracy) A1	
	(b) Suitable reason (real-life)	A1	4
6	**(a)** 1/13	A1	
	(b) 12/13	A1	
	(c) 7/13 + 1/13 = 8/13	M1, A1	4
7	**(a)** 2 × 10 + 2 × 4 = 28	MA1 A1	
	(b) 10 × 4 = 40	MA1	3
8	40 × £15.20 = £608 £430 + £608 = £1038 £40 × 24 = £960 £1038 – £960 = £78	MA1 M1, A1 M1, A1 MA1	6

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			AVAILABLE MARKS
9	**(a)** 4 lines correct	A3	
	(3 lines correct / 2 lines correct)	A2 / A1	
	(b) $40 \times 5/8 = 25$	MA1, A1	
	(c) 1 litre = 1.75 pints	A1	
	7 pints = 7/1.75 = 4	MA1	7
10	**(a)** B	A1	
	(b) C	A1	
	(c) G	A1	3
11	**(a)** he has stopped	A1	
	(b) 24 km	A1	
	(c) $12 \div 1\frac{1}{2}$	M1	
	= 8 km/hr	A1	4

12 **(a)**

	3	5	7	9	11	13
	5	7	9	11	13	15
	7	9	11	13	15	17
	9	11	13	15	17	19

Allow A1 for at least 12 correct entries — A2

(b) 6/24 **or** 1/4 **or** 0.25 **or** 25% — M1, A1 — 4

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			AVAILABLE MARKS
13	(4/25) × 200	MA1	
	32	A1	2
14	$1\frac{1}{2} \times 20 = 30$	MA1	
	$1\frac{1}{2} \times 36 = 54$	MA1	
	$1\frac{1}{2} \times 52 = 78$	MA1	3
15	**(a)** t^6	A1	
	(b) r^4	A1	2
16	£180 ÷ 15 = £12 (Mikey)	MA1	
	£12 × 8 = £96 (Lisa)	MA1	
	£12 × 6 = £72 (Richard)	MA1	3
		Total	**56**

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GCSE

Mathematics (Modular)

January 2009

Mark Schemes

Issued: April 2009

Rewarding Learning

General Certificate of Secondary Education

January 2009

Mathematics

Module N5 Paper 2

(With calculator)

Foundation Tier

[GMN52]

WEDNESDAY 14 JANUARY

3.00 pm – 4.00 pm

MARK SCHEME

STEMUP.CO.UK

GCSE MATHEMATICS JANUARY 2009

Introduction

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

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

M indicates marks for correct method.

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

MA indicates marks for combined method and accurate working.

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

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

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

Positive marking:

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

Some common examples of this occur in the following cases:

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

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

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

			AVAILABLE MARKS
1	**(a)** 110	A1	
	(b) 1 hour 45 minutes **or** 105 minutes	A1	
	(c) 1 kg 260 g	A1	
	(d) 0 kg 760 g indicated	A1	
	(e) 500 g	A1	5
2	**(a)** rhombus	A1	
	(b) equal and parallel	A1, A1	
	(c) right	A1	
	(d) 2	A1	
	(e) correct line of symmetry	A1	6
3	**(a)** £2.80 **or** 280 pence	M1, A1	
	(b) £155 + 24 × 2.8	MA1	
	= £222.20	A1	4
4	**(a)** impossible, unlikely, likely, certain	A4	
	(b) 150/400 (3/8)	M1, A1	6
5	I = 20 □ 8 □ 0.75	MA1	
	= 120	A1	2
6	**(a)** e.g. kite	A1	
	(b) 2	A1	
	(c) completed correctly	A2	4

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			AVAILABLE MARKS
7	**(a)** (1, C), (1, E), (1, A) (2, C), (2, E), (2, A) (3, C), (3, E), (3, A) (4, C), (4, E), (4, A)	MA2	
	(b) $\frac{1}{12}$	MA1	3
8	£8.50 × 24 = £204 Total paid = £329 Cost = £329 – £130 = £199	M1, A1 MA1 MA1	4
9	$14 \div 1\frac{3}{4}$ = 8	M1 A1	2
10	See overlay each line	A1, A1	2
11	**(a)** 255 ×1.35 = €344.25	M1, A1	
	(b) 50 ÷ 1.35 = £37.04	M1, A1	4
12	3.1 × 3.1 = 9.61 6 × 9.61 = 57.66 58 or 57.7	MA1 MA1 A1	3
13	**(a)** 0.1 + 0.25 + 0.3 + 0.15 = 0.8 1 – 0.8 = 0.2	MA1 MA1	
	(b) (0.25 + 0.15) × 600 = 0.4 × 600 = 240	M1, A1	4
14	always odd suitable reason, e.g. 4*n* always even, subtracting 3 always odd	A1, A1	2
15	8500 ÷ 25 = 340 Alice £3400 Barbara £3060 Carol £2040	MA1 MA1 MA1	3
16	Average speed = $\frac{28}{36}$ × 60 = $46\frac{2}{3}$ mph	MA1, A1	2
		Total	**56**

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GCSE MATHEMATICS JANUARY 2009
MODULE N5-2
OVERLAY QUESTION 10

