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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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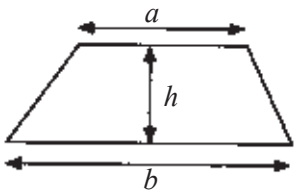
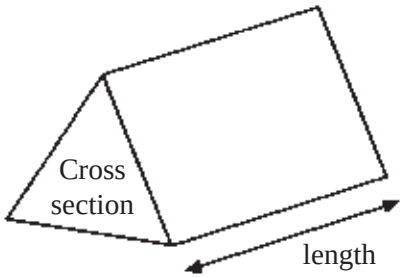
Formula Sheet

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



Volume of prism = area of cross section × length



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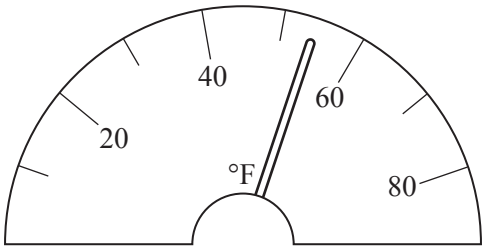
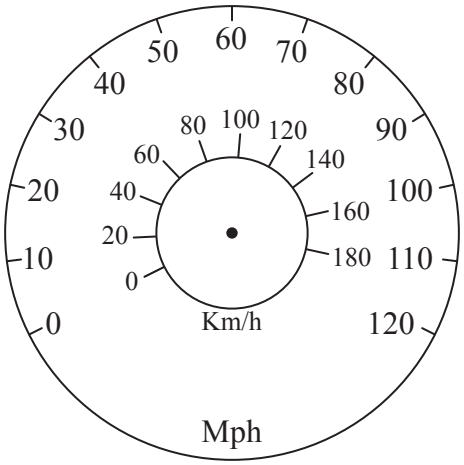
Examiner Only	
Marks	Remark

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.

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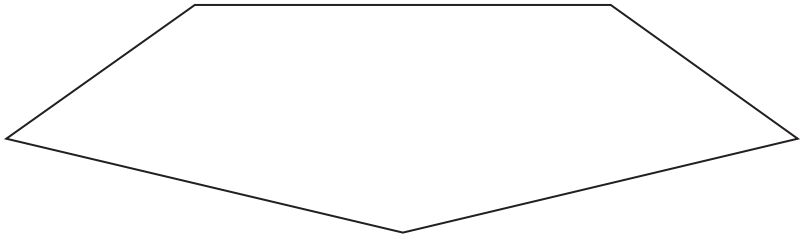
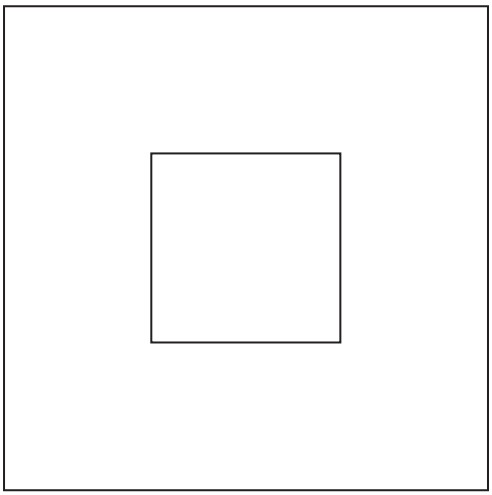
Marks	Remark

(a)



[1]

(b)



[2]

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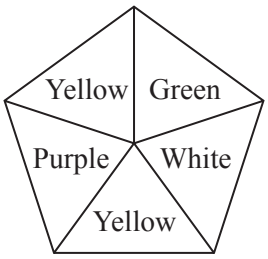
Marks	Remark

3 (a)

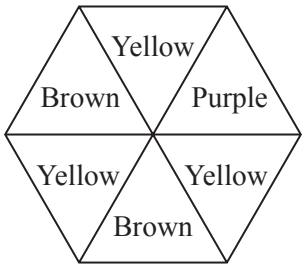


First Spinner

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

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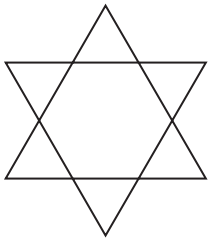
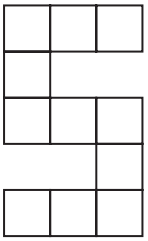
Marks	Remark

(a)



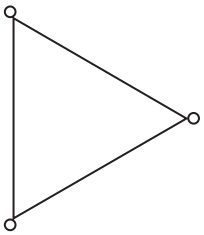
Order _____

(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]

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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]

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Marks	Remark

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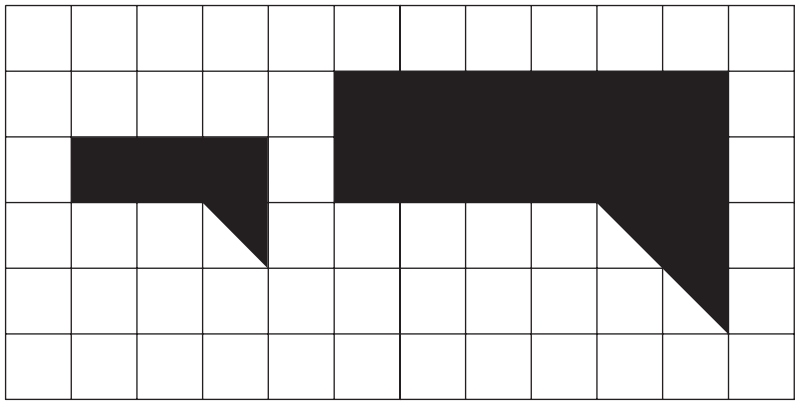
9



SHAPE A SHAPE B

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

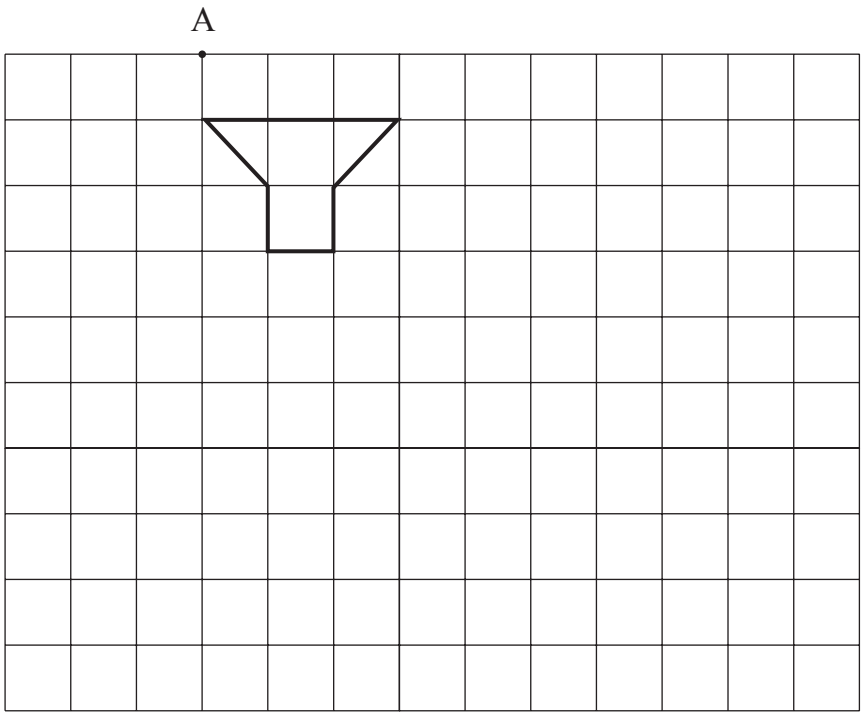
(a) Write down the scale factor of the enlargement.

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]

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Marks	Remark

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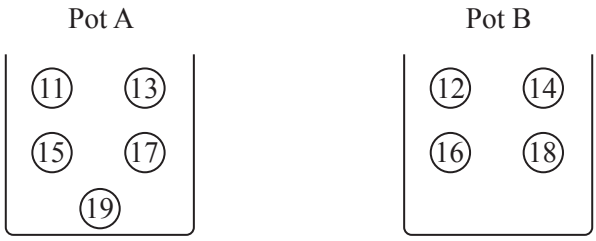
10 Two pots, A and B, contain numbered discs that are all the same size.



(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]

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Marks	Remark

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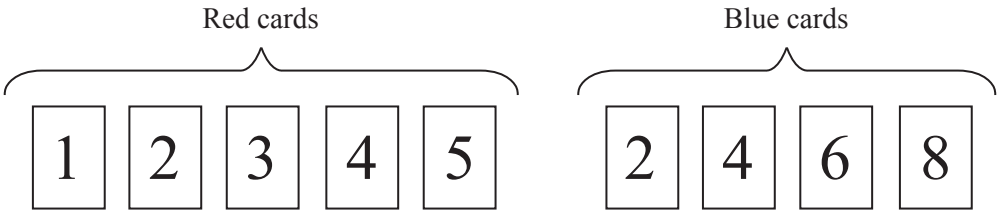
Marks	Remark

11



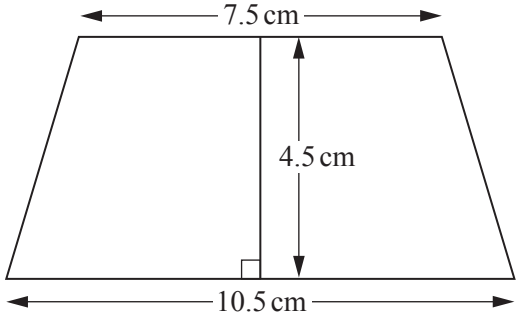
There are two sets of cards on a table.

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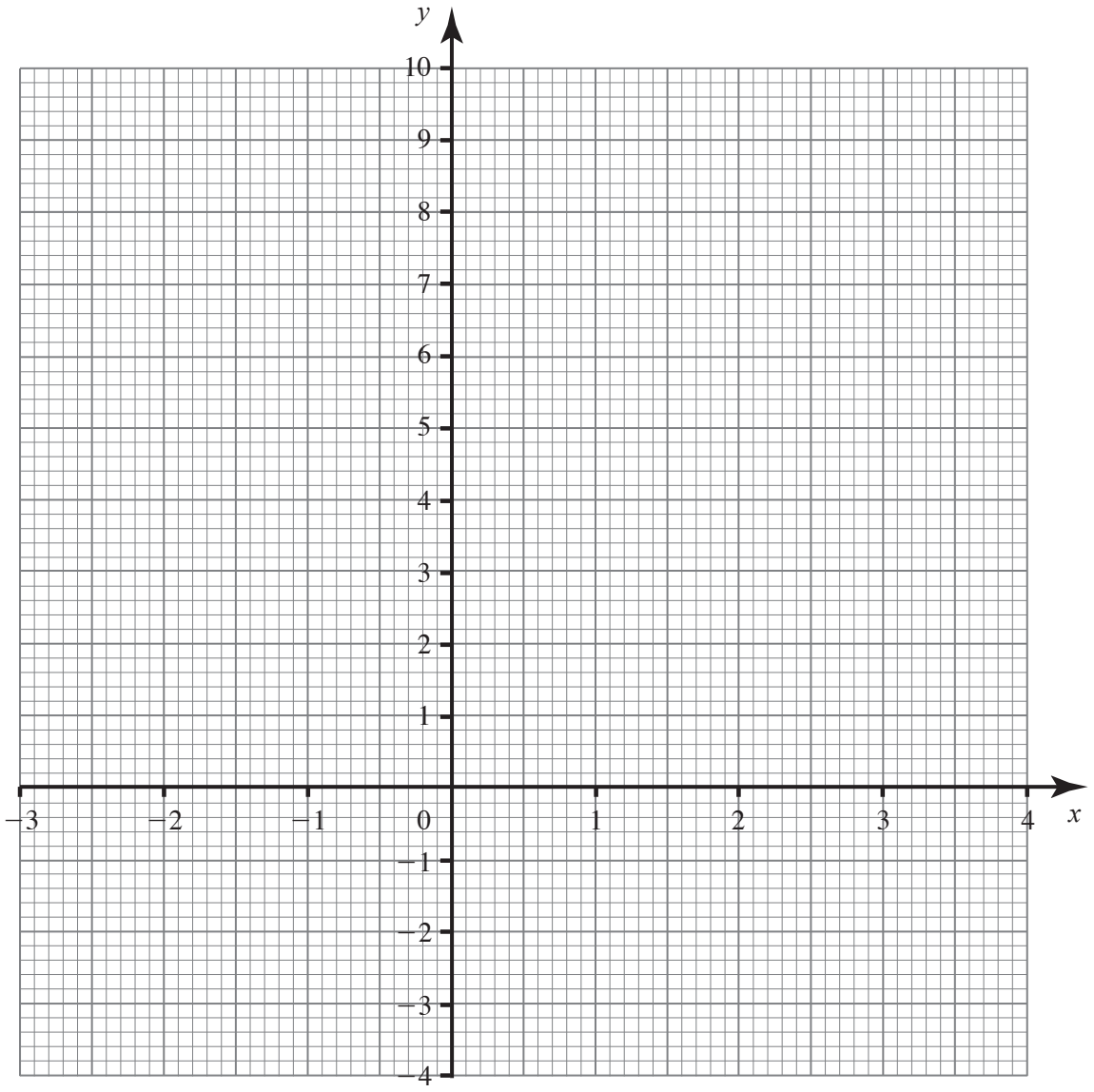
14 **(a)** Complete the table for $y = 2x^2 - 2x - 3$

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]

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