

Student Bounty.com

General Certificate of Secondary Education January 2009

Mathematics



Module N2 Paper 2 (With calculator) **Foundation Tier** [GMN22]



FRIDAY 9 JANUARY 10.30 am – 11.15 am

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper. Answer all 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 44.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

You should have a calculator, ruler, compasses, set-square and protractor.

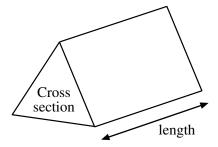
The Formula Sheet is on page 2.

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

Total	
Marks	

Formula Sheet

Volume of prism = area of cross section \times length



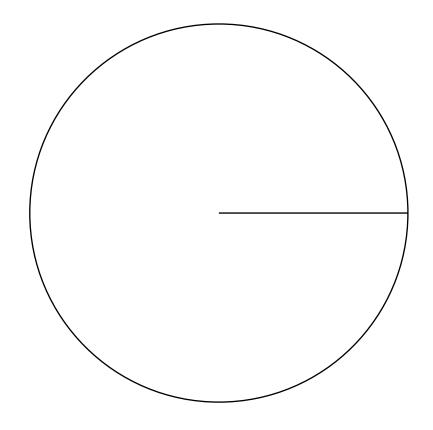
1 The table below gives the estimated population of each of five countries in the year 2000.

Examiner Only

Marks Remark

Draw a pie chart to illustrate this information.

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

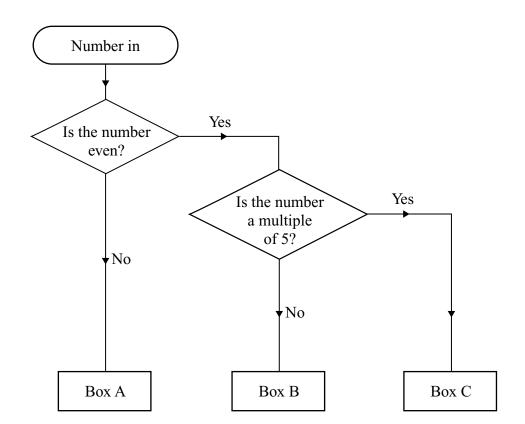


[4]

2	(a)	Simplify	11r_	3v ±	5 ₁ , _	. v
4	(a)	Simpini	/ 4 x —	y +	<i>Jy</i> –	- X

A	$\Gamma \cap I$
Answer	121
	. – .

(h)	Write	down	the	next	term	in	the	seo	nenc	بو.
•	W)	VV IIIC	uown	uic	ΠΕΛΙ	tel III	111	uic	SCY	ucne	J



Using the decision tree diagram, name the box for

- (a) 22 Answer Box _____
- (b) 31 Answer Box _____
- (c) 40 Answer Box _____[2]
- 4 A boy starts school at 9 am. He finishes at 3.25 pm.

There is a 15 minute mid-morning break and a 50 minute lunch break.

There are 8 lessons in the day, each of the same length.

How long is each lesson?

Show your working.

Answer _____minutes [3]

Examiner Only

5	Calculate		Examir	er Only
J	(a) (i) the cube of 6		Marks	Remark
		Answer [1]		
	(ii) 2 ⁴			
		Answer [1]		
	(b) Write 34.56 correct to three significant fig	gures.		
		Answer [1]		

6	(a) A cuboid has volume 300 cm ³ . Its breadth is 5 cm. Write down possible dimensions for its length and height.	Examin Marks	er Only Remark
	Answercm andcm [1] (b) Calculate the area of a circle of radius 2.5 cm.		
	Answer cm ² [2]		
7	A new table is priced at £140 In a sale it is reduced by 35% Calculate the sale price. Answer £[3]		

8 The table shows the engine capacity in litres and the fuel consumption (number of miles per gallon (mpg)) for a selection of new cars.

Examiner Only		
Marks	Remark	

Car	Engine capacity (litres)	Fuel consumption (mpg)
Aster	1.3	45
Viva	2.0	37
Megro	2.5	32
Lazio	1.6	42
Torino	1.8	39
Serene	1.0	50

- (a) Draw a scatter graph on the grid opposite to show the data in the table. [2]
- **(b)** Describe the type of correlation shown on the scatter graph.

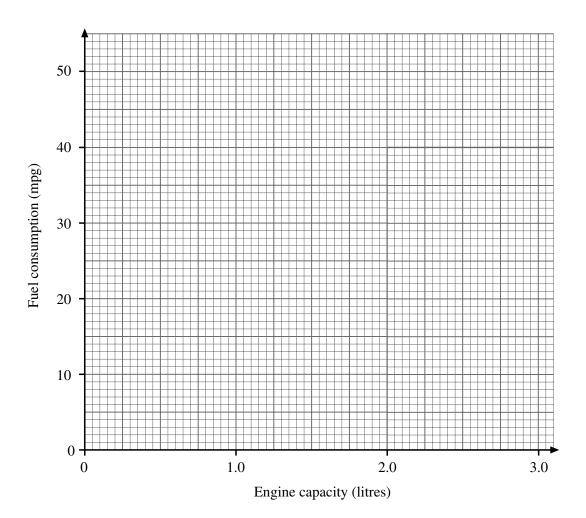
Answer _____ [1]

(c) Draw a line of best fit for the data.

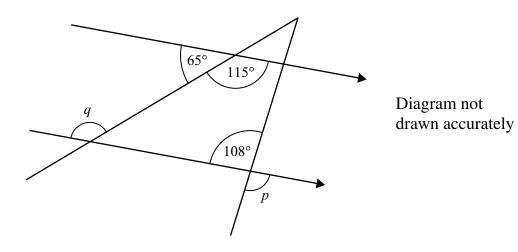
[1]

(d) Using your line of best fit, what fuel consumption in mpg would you expect from a car with an engine capacity of 2.2 litres?

Answer _____ mpg [1]



9

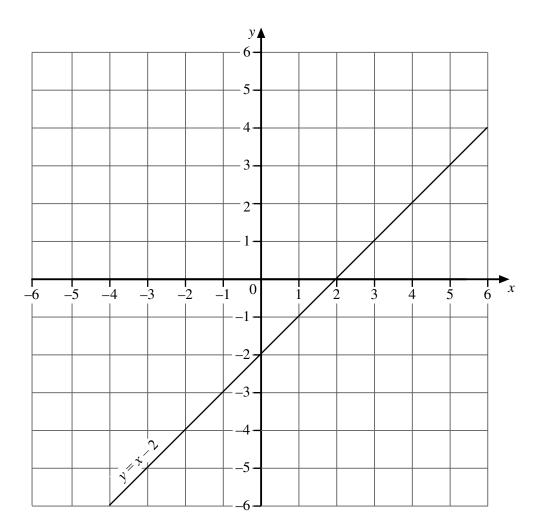


Examiner Only	
Remark	

Calculate

- (a) angle p
- **(b)** angle q

- Answer _____° [1]
- Answer ______° [1]



Examiner Only

Marks Remark

The line y = x - 2 has been drawn on the grid.

(a) Draw the line
$$y = \frac{1}{2}x + 1$$
 on the same grid. [3]

- (b) Write down the coordinates of the point of intersection of the two lines.
 - Answer (_____, ____) [1]

11 Carol leaves £1200 in the bank for three years. It earns compound interest of 6% each year.

Examiner Only		
Marks	Remark	
1		

Calculate the total amount Carol has in the bank at the end of the three years.

Answer £	[3]
Allowel L	J

12 The PSNI recorded the speeds of a number of vehicles passing under a bridge on the M2 motorway during a 2 minute period one morning. The speeds recorded are in miles per hour (mph).

Speed s (mph)	Frequency	
$44 \le s < 50$	3	
$50 \le s < 56$	7	
$56 \le s < 62$	8	
$62 \le s < 68$	6	
$68 \le s < 74$	5	
$74 \le s < 80$	1	

Calculate an estimate for the mean speed.

Answer mph [4	1
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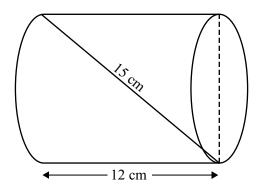
13	The interior	angle of a	regular	polygon	is	135°
13		angic of a	regulai	porygon	13	133

Examiner Only		
Marks	Remark	

How many sides has the polygon? **Show your working.**

Ancwer	ſ	2
Answer		Z

14



A straw of length 15 cm just fits inside a cylindrical container of length 12 cm as shown. Calculate the diameter of the cylinder.

Answer	cm	[3]
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THIS IS THE END OF THE QUESTION PAPER



