

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

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General Certificate of Secondary Education
June 2004



MATHEMATICS (MODULAR) (SPECIFICATION B) 33001/IA
Module 1 Intermediate Tier Section A

Thursday 17 June 2004 1.30 pm to 1.55 pm

<p>In addition to this paper you will require:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments • a treasury tag. 	
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For Examiner's Use			
Section A		Section B	
Number	Mark	Number	Mark
1		5	
2		6	
3		7	
4		8	
		9	
Total Section A			
Total Section B			
TOTAL			
Examiner's Initials			

Time allowed for Section A: 25 minutes

Instructions

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Do all rough work in this booklet.
- This paper is divided into **two** sections: Section A and Section B.
- After the 25 minutes allowed for Section A, you must put your calculator on the floor under your seat. You will then be given Section B.
- When you have answered Section B you may work again on Section A but you may **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

Information

- The maximum mark for Section A is 20.
- Mark allocations are shown in brackets.
- Additional answer paper and graph paper will be issued on request and must be tagged securely to this answer booklet.
- You are expected to use a calculator where appropriate.

Advice

- In all calculations, show clearly how you work out your answer.

NO QUESTIONS APPEAR ON THIS PAGE

Answer **all** questions in the spaces provided.

- 1 The table shows the type of heating used in 80 houses.

Type of heating	Number of houses
Gas	36
Electricity	30
Oil	10
Coal	4

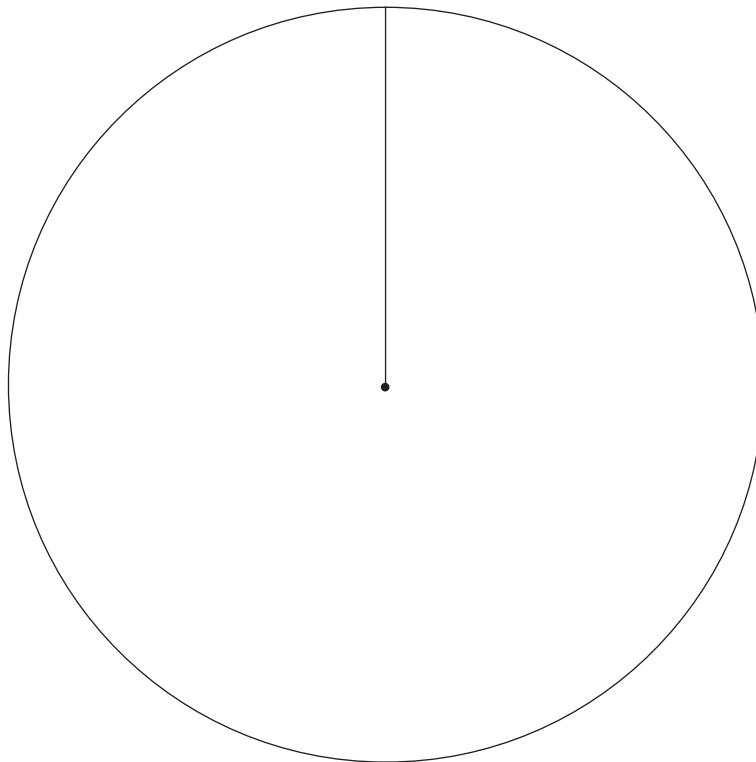
Draw and label a pie chart to represent this information.

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(4 marks)

Turn over ►



- 2 A biased spinner has sections numbered 1, 2, 3, 4 and 5.
The table shows the probabilities of the spinner landing on some of the numbers.

Number	1	2	3	4	5
Probability	0.04		0.43	0.23	0.12

- (a) Calculate the missing probability in the table.

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Answer (2 marks)

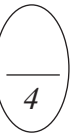
- (b) Calculate the probability that the spinner lands on a number greater than 2.

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Answer (2 marks)



- 3 A police officer records the speeds of 60 cars on a dual carriageway.

Speed (mph)	Frequency	Midpoint	
40 to less than 50	9		
50 to less than 60	27		
60 to less than 70	21		
70 to less than 80	3		

- (a) Write down the modal class.

Answer mph (1 mark)

- (b) Use the class midpoints to calculate an estimate of the mean speed of these cars.

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Answer mph (3 marks)

4

TURN OVER FOR THE NEXT QUESTION

Turn over ►

- 4 The table shows the number of people enrolled in keep fit classes at a college each term.

	2002			2003		
	Term 1	Term 2	Term 3	Term 1	Term 2	Term 3
Number of people	22	49	31	28	58	

- (a) The first three-point moving average is 34.

- (i) Calculate the second three-point moving average.

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Answer (2 marks)

- (ii) Calculate the third three-point moving average.

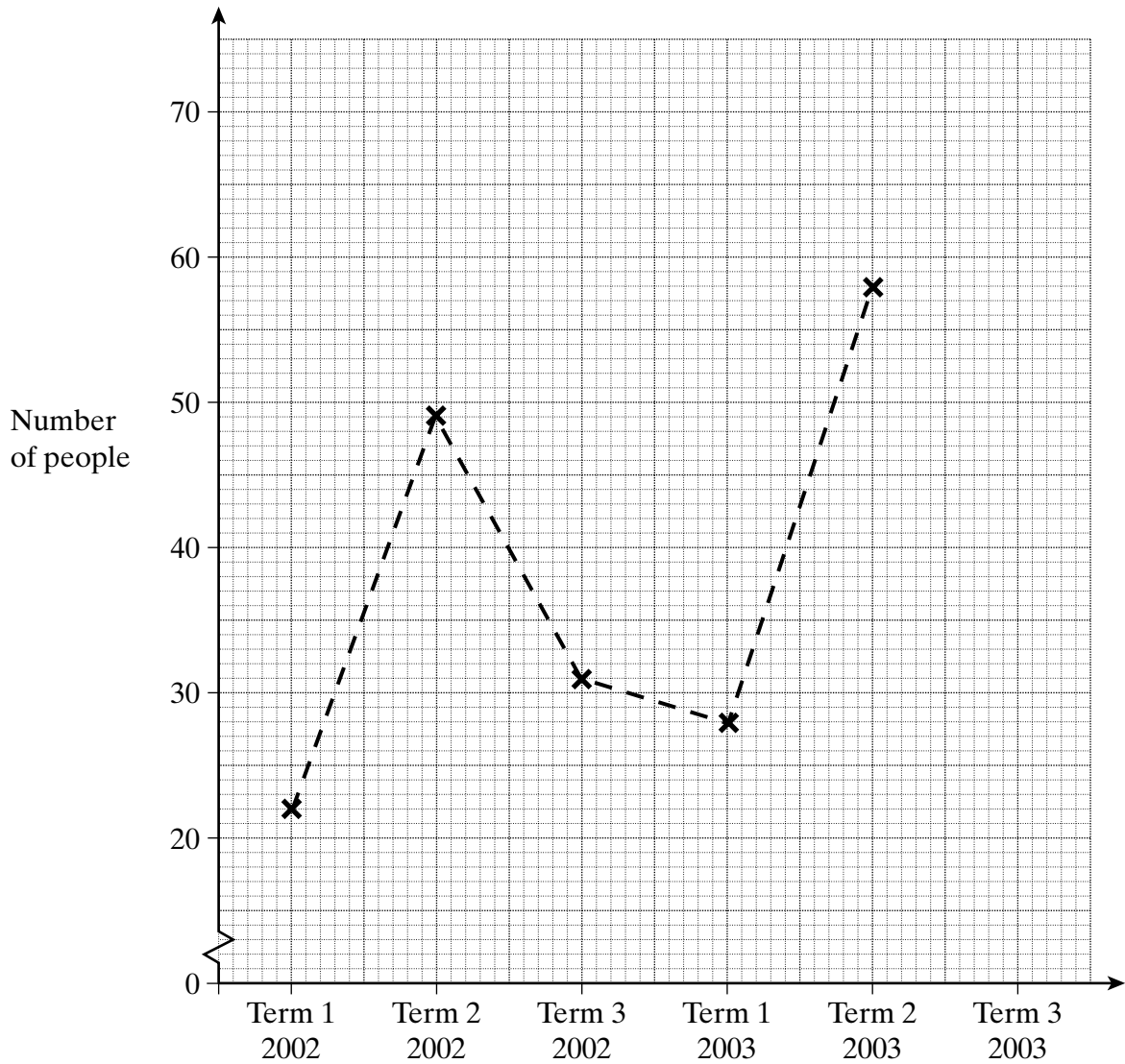
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Answer (1 mark)

- (b) The time series graph shows the original data.
Plot **all** the moving averages on the graph.



(2 marks)

- (c) Use the trend to estimate the number of people enrolled in keep fit classes at the college in Term 3 of 2003.

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Answer (3 marks)

END OF SECTION A

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE