Surname		Other Names	
Centre Number			Candidate Number									
Candidate Signature												

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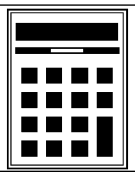
General Certificate of Secondary Education
June 2004

ASSESSMENT and QUALIFICATIONS ALLIANCE

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

Thursday 17 June 2004 1.30 pm to 1.55 pm

In addition to this paper you will require:
- a calculator
- mathematical instruments
- a treasury tag.



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.

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			

NO QUESTIONS APPEAR ON THIS PAGE

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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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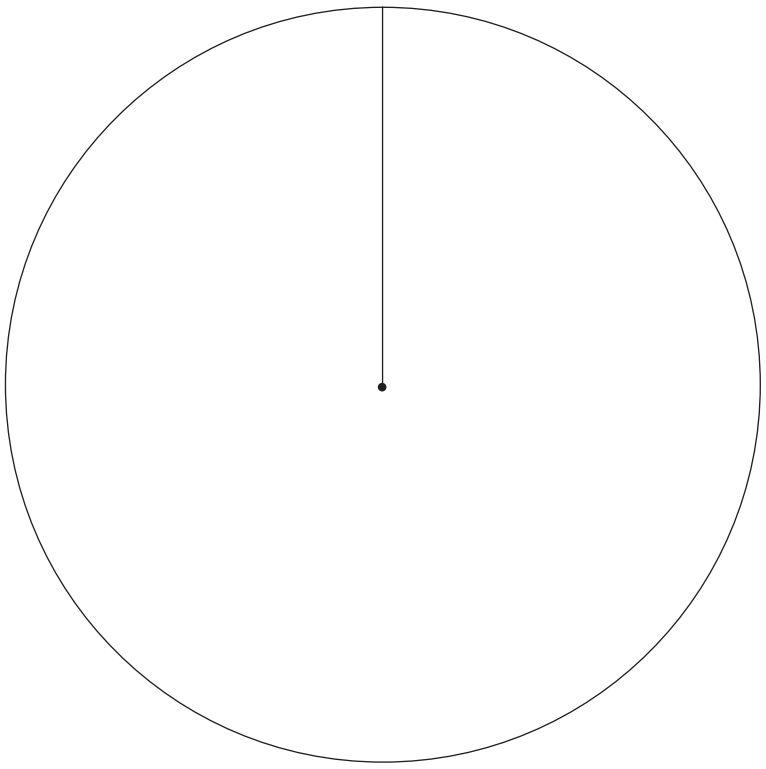

(4 marks)

4

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)*

4

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

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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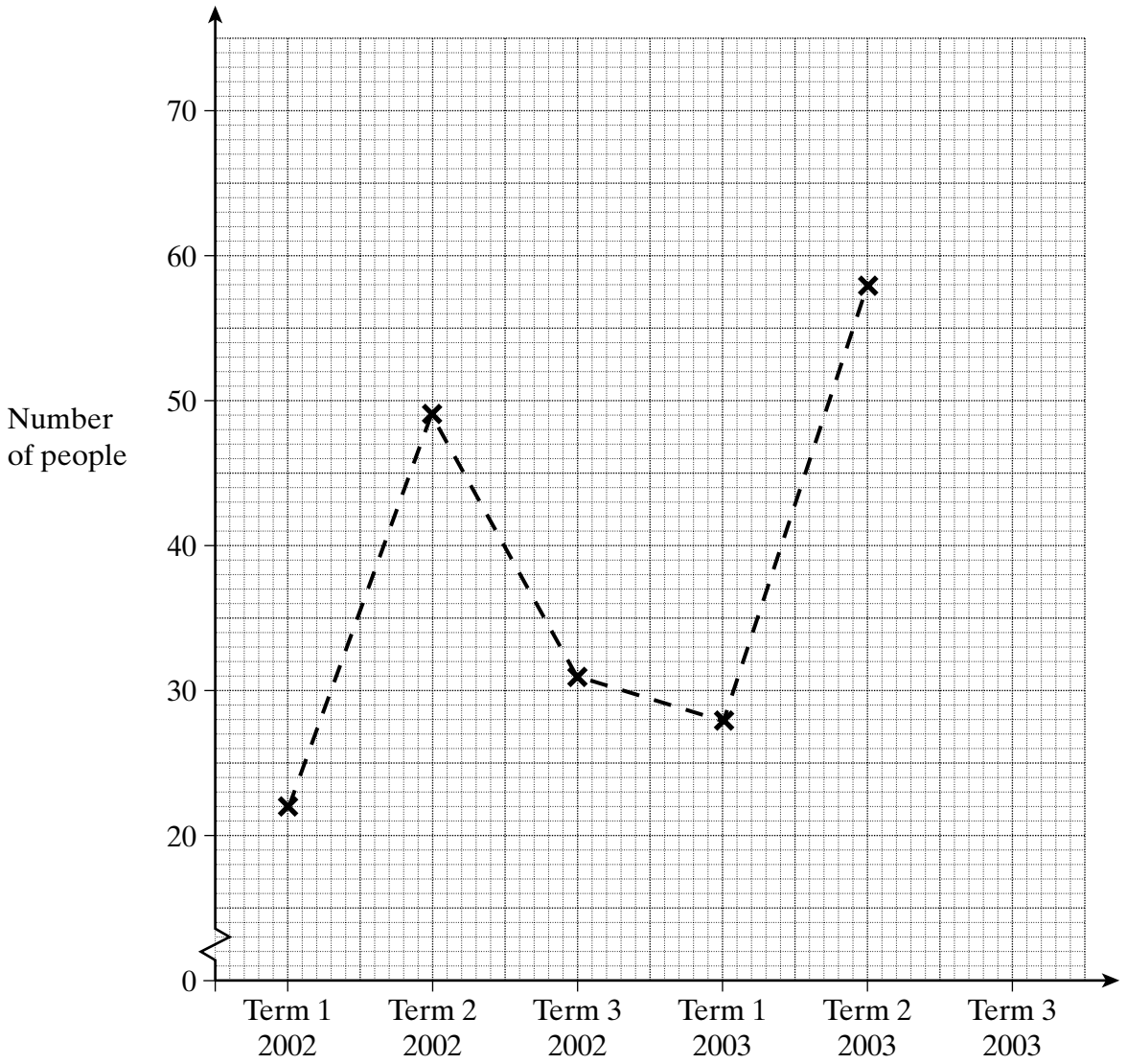
Answer ..... *(1 mark)*

(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