Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

Leave blank

General Certificate of Secondary Education
June 2004

AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

**MATHEMATICS (MODULAR) (SPECIFICATION B)   33001/HA
Module 1 Higher Tier Section A**

Thursday 17 June 2004 1.30 pm to 1.55 pm

H

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.

33001/HA

NO QUESTIONS APPEAR ON THIS PAGE

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

1 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		

Use the class midpoints to calculate an estimate of the mean speed of these cars.

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Answer .... mph   *(3 marks)*

$\frac{}{3}$

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

2 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.
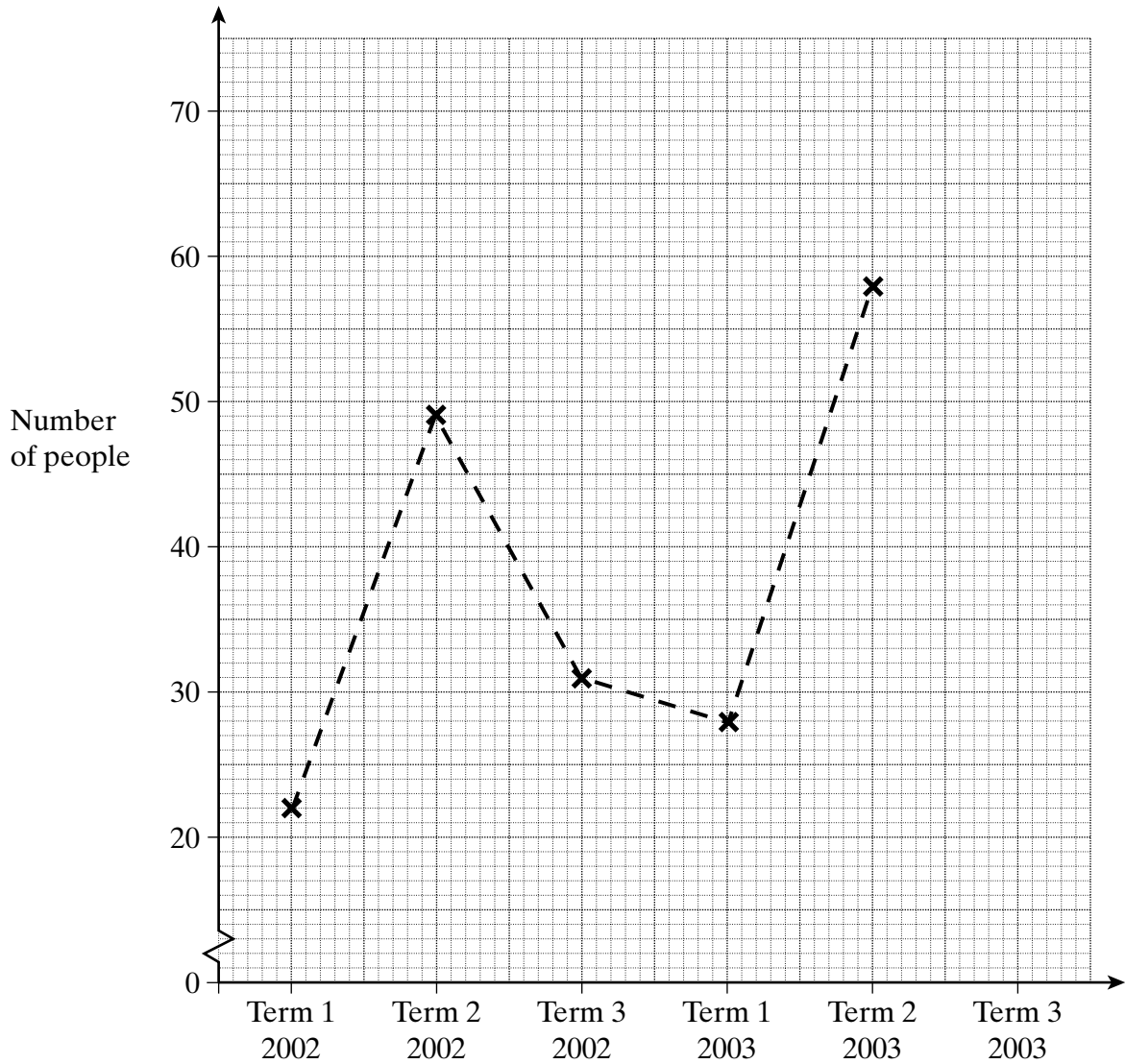
(2 marks)

(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)*

Turn over ▶

3 There are 11 sweets in a bag.
Four are soft-centred and seven are hard-centred.
Two sweets are selected at random.

Calculate the probability that

(a) both sweets are hard-centred,

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Answer .... *(2 marks)*

(b) one sweet is soft-centred and one sweet is hard-centred.

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Answer .... *(3 marks)*

5

4 The histogram shows the lengths of leaves of a certain species of plant.

Frequency
density

Length (mm)
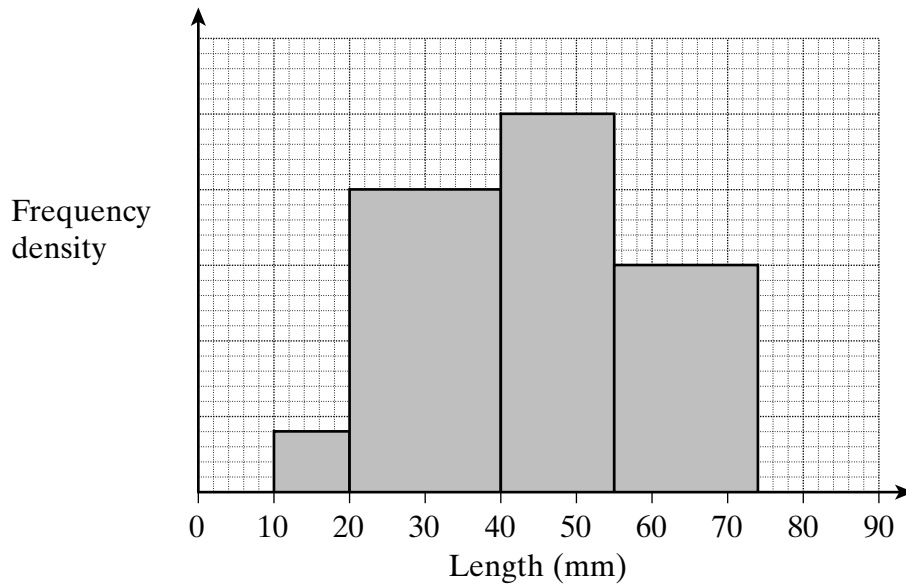
Forty two leaves measured 25 mm or less.

How many leaves measured 60 mm or more?

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　　　　　　　Answer ....　　*(4 marks)*

4

END OF SECTION A

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE