Surname		Other Names	
Centre Number						Candidate Number				
Candidate Signature										

General Certificate of Secondary Education
June 2004

ASSESSMENT and QUALIFICATIONS ALLIANCE

MATHEMATICS (MODULAR) (SPECIFICATION B) 33001/HB
Module 1 Higher Tier Section B

Thursday 17 June 2004 2.00 pm to 2.25 pm

H

In addition to this paper you will require: mathematical instruments. You must **not** use a calculator.	

Time allowed for Section B: 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.
- You may **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
- 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 B 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.

Advice

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

NO QUESTIONS APPEAR ON THIS PAGE

LEAVE MARGIN BLANK

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

5 Twenty pupils each shuffle a pack of coloured cards and choose a card at random. The colour of the card is recorded for each pupil.

(R = Red B = Blue G = Green Y = Yellow)

B	Y	Y	G	R
G	R	Y	B	B
Y	R	B	B	Y
B	B	G	R	Y

(a) Use these results to calculate the relative frequency of each colour.

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Colour	Red	Blue	Green	Yellow
Relative frequency				

(2 marks)

(b) Use the results to calculate how many times you would expect a blue card if 100 pupils each choose a card at random.

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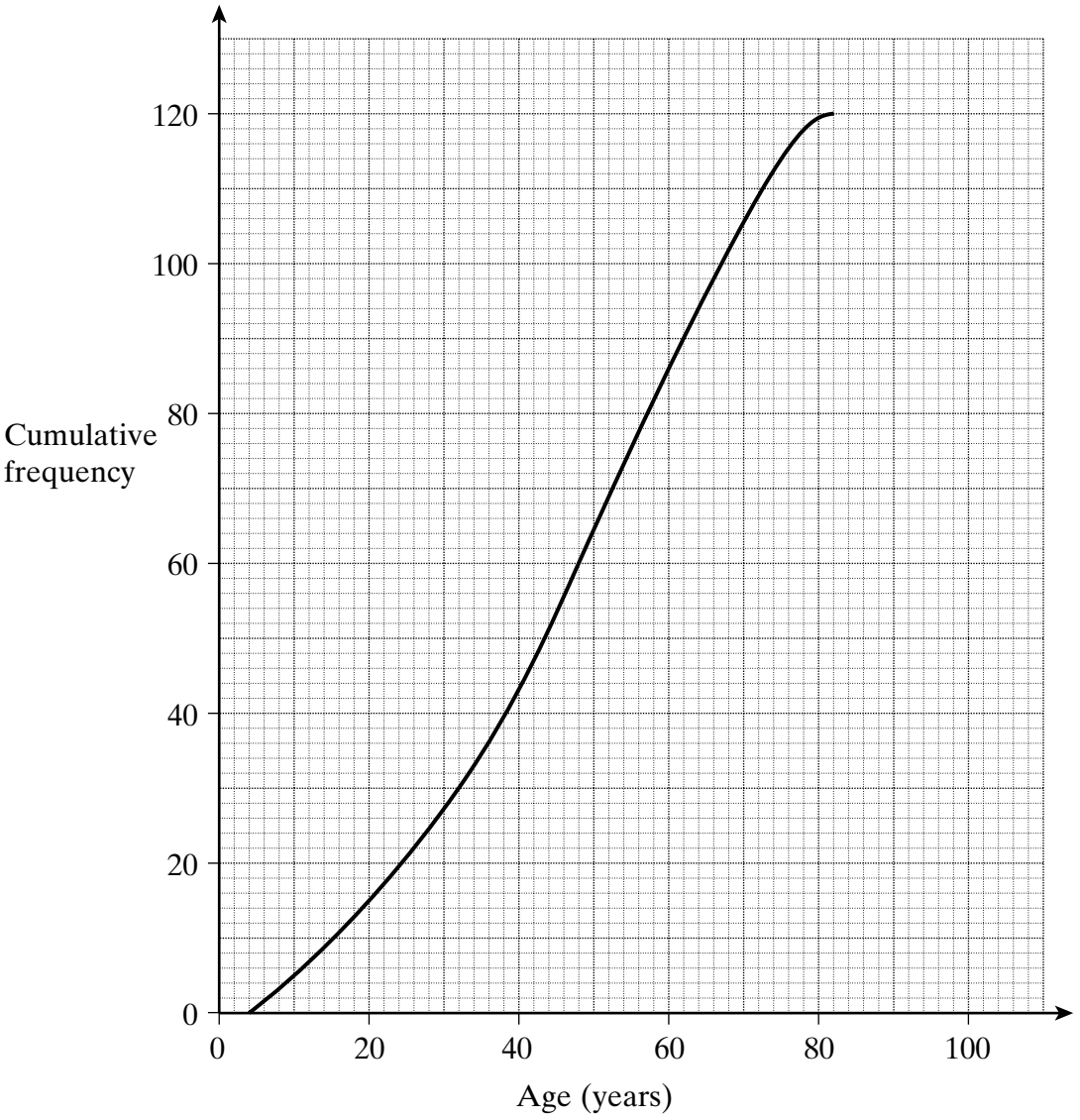
Answer ..... *(2 marks)*

4

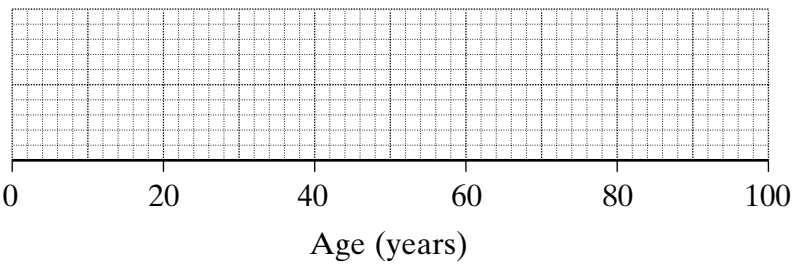
Turn over ▶

6 The ages of all the people in a small village are recorded.
The youngest person is 4 years old and the oldest person is 82 years old.
The information is shown on the cumulative frequency diagram.



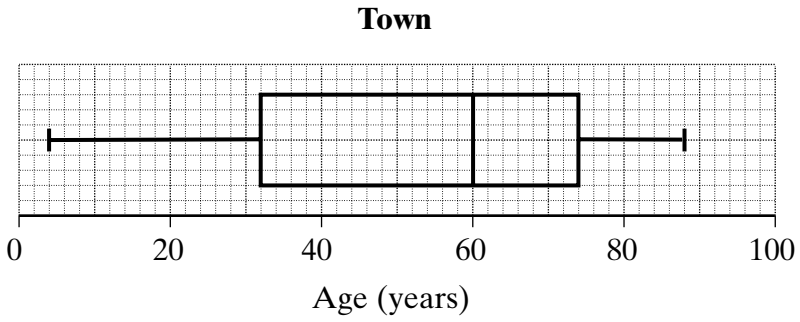
(a) Draw a box plot for these data.

Village



(4 marks)

(b) The box plot below shows the ages of all the people in a town.



Write down **two** differences between the ages of the people in the village and the people in the town.

Difference 1 .....

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Difference 2 .....

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(2 marks)

6

TURN OVER FOR THE NEXT QUESTION

7 1000 people visit a museum one day.
The table shows the number of each type of visitor.

	Child	**Adult**	**Senior Citizen**
Number of visitors	318	452	230

Peter wants to find out the views of the visitors.
He decides to take a stratified sample of 50 visitors.

Calculate the number of each type of visitor he should choose.

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Answer Child .....

Adult .....

Senior Citizen .....

(4 marks)

4

8 Shereen has two bags of marbles.
Bag *A* contains 3 red marbles and 4 green marbles.
Bag *B* contains 2 red marbles and 3 green marbles.

Shereen throws a fair six-sided dice.
If the dice lands on a six, she takes a marble at random from bag *A*.
If the dice lands on any other number, she takes a marble at random from bag *B*.

(a) Draw a fully labelled tree diagram showing the above information.
Mark the probabilities on the appropriate branches.

(3 marks)

(b) Calculate the probability that a red marble is selected.

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

6

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE