Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

General Certificate of Secondary Education
June 2005

AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

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

Friday 17 June 2005 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.

33001/HB

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

5   A bag contains 200 coloured discs.
    The discs are either red, blue or yellow.
    There are 86 red discs in the bag.
    The probability that a blue disc is chosen from the bag is 0.22

    Calculate the number of yellow discs in the bag.

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Answer .... *(4 marks)*

4

6 The probability that it rains on any day in June is 0.3
The tree diagram represents a Saturday and a Sunday in June.

(a) Fill in the probabilities on the tree diagram.

Saturday	Sunday

```
                                                          Rains
                          .............
              Rains  <
  .............               .............    Does
                                               not rain
      <
                              .............    Rains
  .............         <
              Does
              not rain
                          .............       Does
                                              not rain
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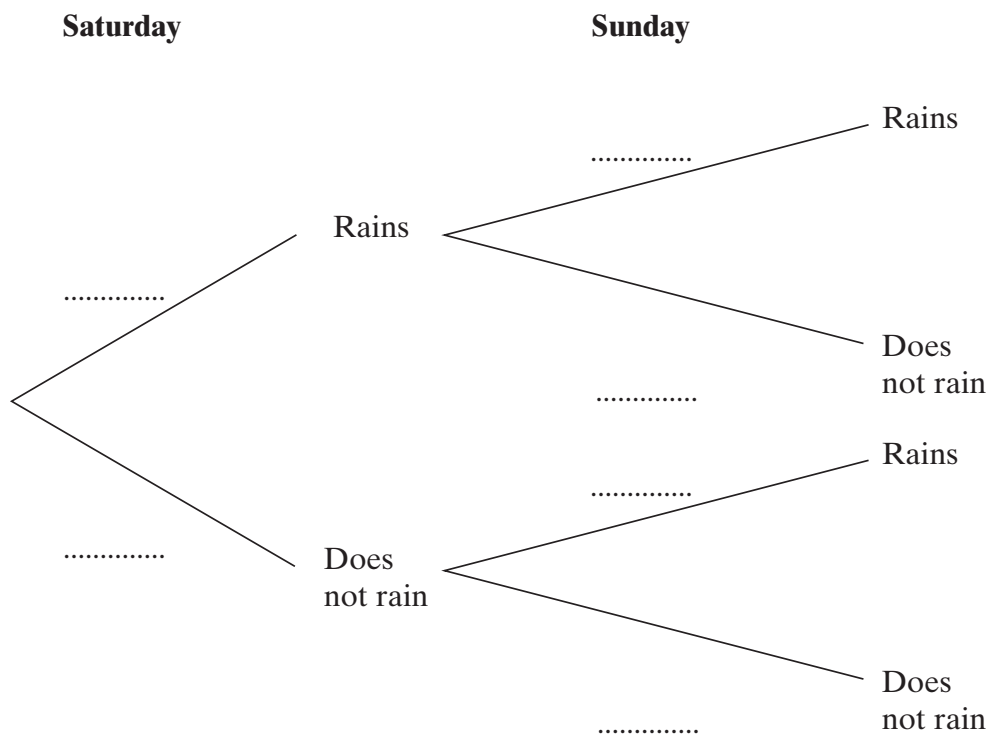
(2 marks)

(b) Calculate the probability that it rains on only one of these days.

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Answer .... *(3 marks)*

$\frac{}{5}$

Turn over ▶

7 The grouped frequency table shows the weights, in kg, of 100 twelve-year-old Nearland boys.

Weight, x (kg)	Frequency
$45 \leqslant x < 50$	3
$50 \leqslant x < 60$	26
$60 \leqslant x < 65$	25
$65 \leqslant x < 70$	30
$70 \leqslant x < 80$	16

(a) Draw a histogram to represent the weights of the Nearland boys.

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Nearland Boys' Weights

(3 marks)

(b) Estimate how many Nearland boys weighed between 55 kg and 67 kg.

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Answer .... *(2 marks)*

(c) The weights of 100 twelve-year-old Farland boys are shown in the histogram below.

Farland Boys' Weights
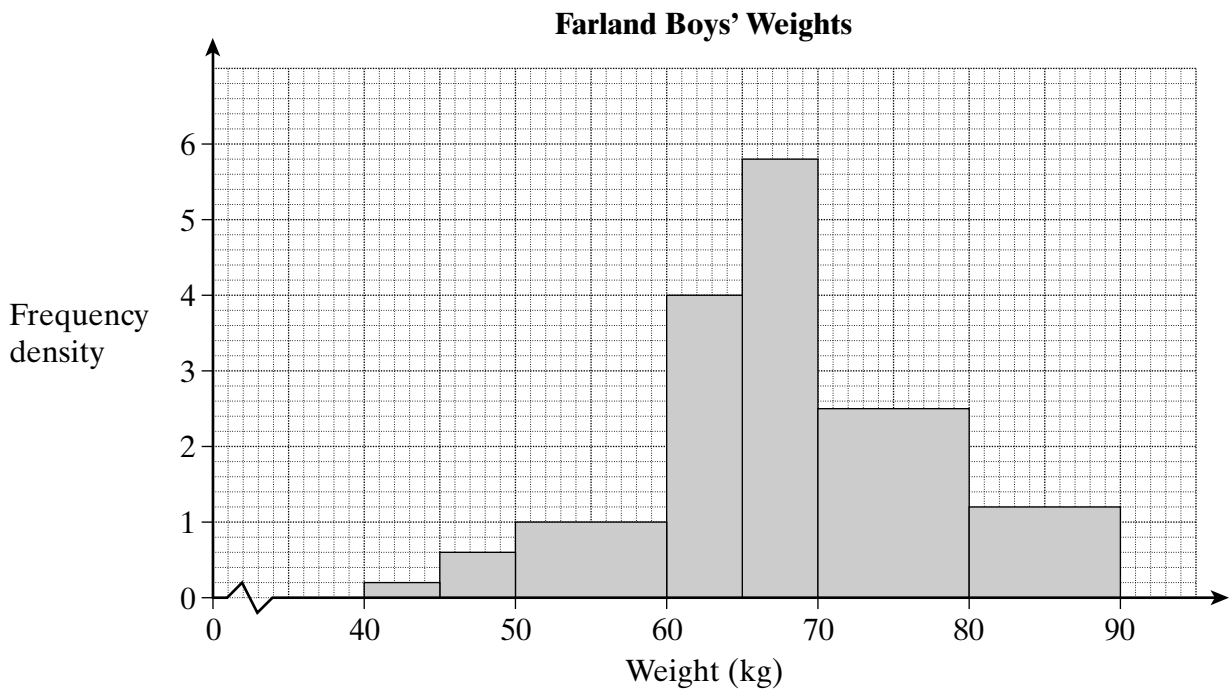
Compare the weights of the Farland boys with the weights of the Nearland boys.

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(2 marks)

7

Turn over ▶

8 The time taken, in minutes, for a group of students to complete their homework is summarised in the grouped frequency table.

Time, t (minutes)	Frequency
$5 \leqslant t < 15$	3
$15 \leqslant t < 25$	f
$25 \leqslant t < 35$	7
$35 \leqslant t < 45$	6
$45 \leqslant t < 55$	4

The grouped data was used to calculate an estimate of the mean.
This was found to be 30 minutes.

Calculate the value of the missing frequency, f.
You **must** show your working.

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Answer .... *(4 marks)*

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END OF QUESTIONS

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