Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

General Certificate of Secondary Education
June 2003

AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

MATHEMATICS (MODULAR) (SPECIFICATION B)   33001/FA
Module 1 Foundation Tier Section A

Thursday 12 June 2003 1.30 pm to 1.55 pm

F

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

For Examiner's Use			
Section A		**Section B**	
Number	Mark	Number	Mark
1		5	
2		6	
3		7	
4		8	
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, make sure that you hand in **both** Section A and Section B securely tagged 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.

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

1 The table shows the number of cars parked in three hospital car parks at 2 pm on one afternoon.

Car park	Number of cars
Staff (*S*)	40
Visitors (*V*)	70
Casualty (*C*)	65

(a) Draw a bar chart to show this information.
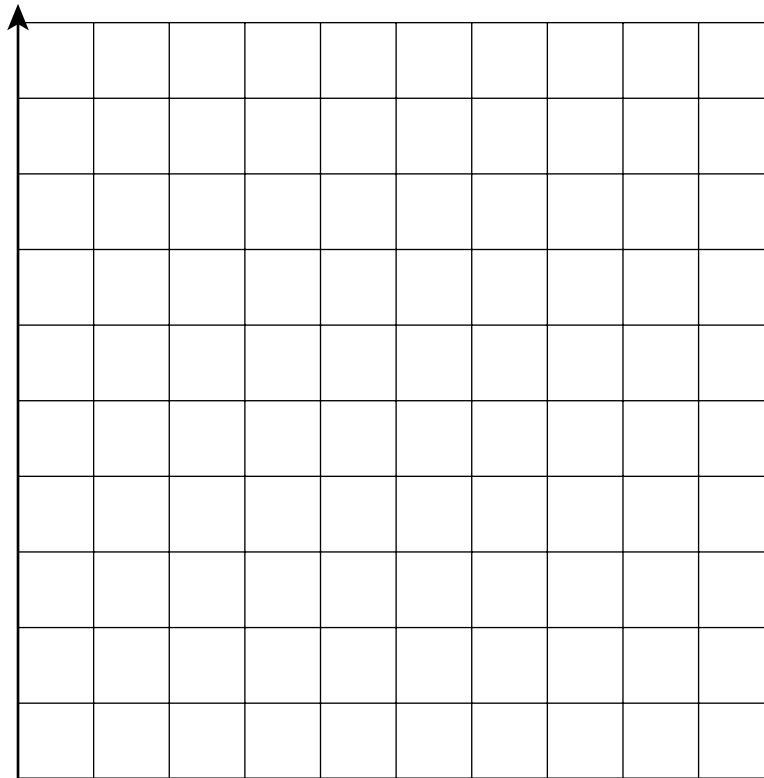
(3 marks)

(b) Work out how many more cars were parked in the Visitors car park than in the Staff car park.

....

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

(c) The table below shows the number of empty car parking spaces in the three hospital car parks at 2 pm on that afternoon.

Car park	Number of empty car parking spaces
Staff (S)	5
Visitors (V)	3
Casualty (C)	2

Calculate the **total** number of cars that can be parked in the three car parks.

....

....

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

2   A standard fair dice numbered 1 to 6 is thrown once.
The probability of one of the following events is marked with an arrow on the scale below.

A   The dice lands showing an odd number.
B   The dice lands showing a number greater than two.
C   The dice lands showing the number five.

0   1

(a) Label the arrow to show which event it represents.   *(1 mark)*

(b) Mark and label the scale to show the probabilities of the other two events.
                                                                                   (2 marks)

(c) Which event has an 'evens' chance of happening?

Answer ....   *(1 mark)*

Turn over ▶

3 The time, in minutes, that seven teenagers spent using their computer and spent watching TV on one day is recorded in the table.

Time spent using computer (minutes)	10	20	30	40	45	55	60
Time spent watching TV (minutes)	50	40	45	40	30	30	20

(a) Plot these data as a scatter graph on the grid below.

Time spent watching TV (minutes)

Time spent using computer (minutes)
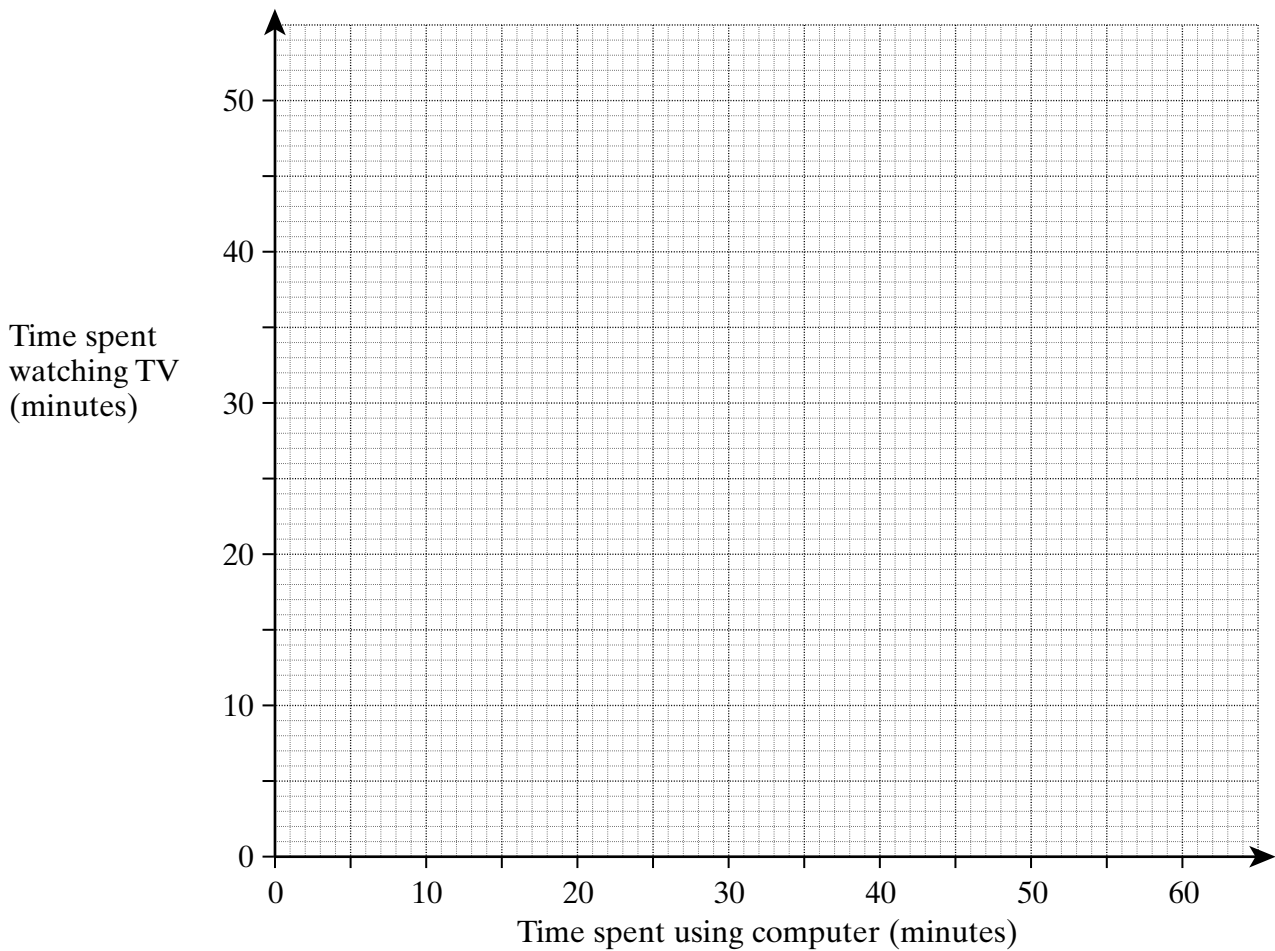
(2 marks)

(b) Draw a line of best fit on your scatter graph. *(1 mark)*

(c) Describe the relationship shown in the scatter graph.

....

....

....

(1 mark)

(d)   A questionnaire contained the following question.

> Don't you agree that spending time using a computer is better
> for a child's education than spending time watching TV?

Give **one** reason why this question is not suitable for the questionnaire.

....

....

....
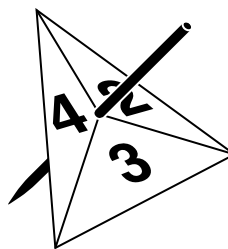
(1 mark)

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

4 Ashraf is playing a game with a fair coin and a fair triangular spinner with sections numbered 2, 3 and 4.

He flips the coin and then spins the spinner.

If the coin shows heads, his score is the number on the spinner **multiplied** by 3.
If the coin shows tails, his score is the number on the spinner.

(a) Complete the table to show all the possible scores that Ashraf can get.

		Spinner		
		2	**3**	**4**
Coin	**Heads**			
	Tails			

(2 marks)

(b) Write down the probability that Ashraf gets a score of

(i) 9,

Answer .... *(1 mark)*

(ii) 6 or less.

....

Answer .... *(2 marks)*

END OF SECTION A

Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

General Certificate of Secondary Education
June 2003

MATHEMATICS (MODULAR) (SPECIFICATION B)   33001/FB
Module 1 Foundation Tier Section B

Thursday 12 June 2003 2.00 pm to 2.25 pm

F

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, make sure that you hand in **both** Section A and Section B securely tagged 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.

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

5 A school carried out a survey one day of the number of pupils wearing trainers.

The dual bar chart shows the results.
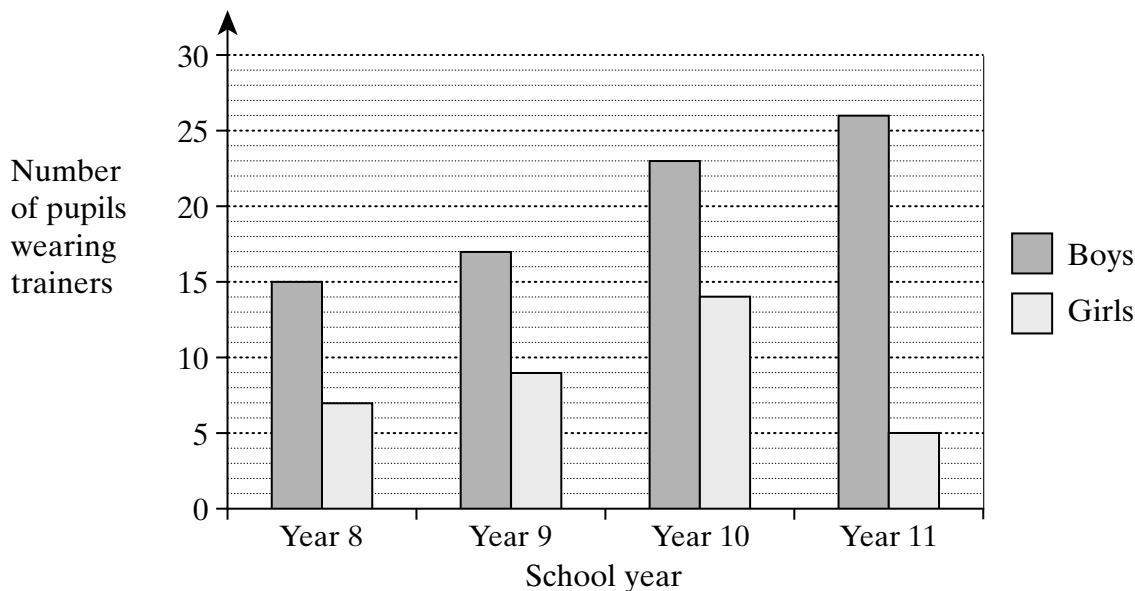
(a) How many girls in Year 8 were wearing trainers?

Answer .... *(1 mark)*

(b) Work out the total number of pupils in Year 11 wearing trainers.

....

Answer .... *(2 marks)*

(c) Which school year had the greatest total number of pupils wearing trainers?

....

....

....

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

(d) Describe one general difference between the number of boys and the number of girls wearing trainers.

....

....

....

(1 mark)

5

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

6 The distances, to the nearest mile, that 20 people travel to work are recorded below.

5	2	4	14	19	6	21	28	3	14
44	12	18	4	7	32	16	8	13	9

(a) Complete the tally and frequency columns in the chart below.

Distance (miles)	Tally	Frequency
1 - 10		
11 - 20		
21 - 30		
31 - 40		
41 - 50		

(2 marks)

(b) How many people travel between 11 and 20 miles to work?

....

Answer .... *(1 mark)*

(c) A person is chosen at random from this group of 20 people.

What is the probability that this person travels between 1 and 10 miles to work?

....

Answer .... *(1 mark)*

7 Emma is carrying out a survey on pets.

She asks ten of her friends how many pets they have.

The replies are

    2   1   4   1   3   0   1   2   0   3

(a) Calculate the mean of these numbers.

....

....

....

Answer .... *(3 marks)*

Emma reads in a magazine that there is a link between the number of children and the number of pets in a family.

(b) Design a two-way table to record the number of pets and the number of children in a sample of families.

(3 marks)

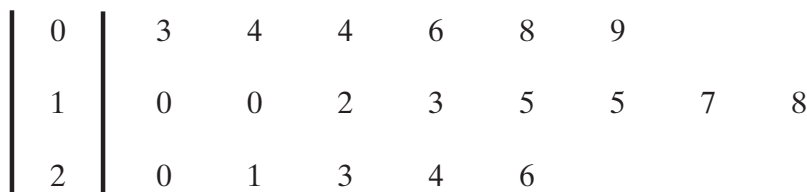(c) Complete your two-way table by inventing data for eight families. *(1 mark)*

Turn over ▶

8 A sample of 19 students was taken from Newtown College.

The stem and leaf diagram shows the number of days that these students were absent last year.

Key: $\mid$ 1 $\mid$ 7 represents 17 days

0	3 4 4 6 8 9
1	0 0 2 3 5 5 7 8
2	0 1 3 4 6

(a) Write down the median number of days absent.

....

Answer .... *(1 mark)*

(b) Calculate the range of the number of days absent.

....

....

Answer .... *(1 mark)*

(c) Jane is a student at the college.

When her number of days absent last year is added to the stem and leaf diagram both the median and the range increase by one.

How many days was Jane absent from college last year?

....

....

Answer .... *(2 marks)*

4

END OF QUESTIONS