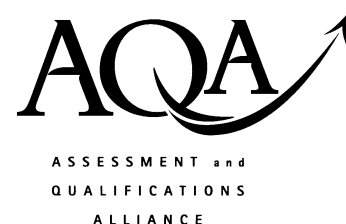


Surname											Other Names										
Centre Number											Candidate Number										
Candidate Signature																					

For Examiner's Use

Free-Standing Mathematics Qualification
June 2007
Intermediate Level



HANDLING AND INTERPRETING DATA

Unit 6

6986/2

Thursday 17 May 2007 1.30 pm to 2.45 pm

For this paper you must have:

- a calculator
- a clean copy of the Data Sheet (enclosed)
- a protractor
- a ruler.

Time allowed: 1 hour 15 minutes

Instructions

- Use blue or black ink or ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- You may **not** refer to the copy of the Data Sheet that was available prior to this examination. A clean copy is enclosed for your use.

Information

- The maximum mark for this paper is 50.
- The marks for questions are shown in brackets.
- 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			
Question	Mark	Question	Mark
1		5	
2		6	
3			
4			
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			

SECTION A

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

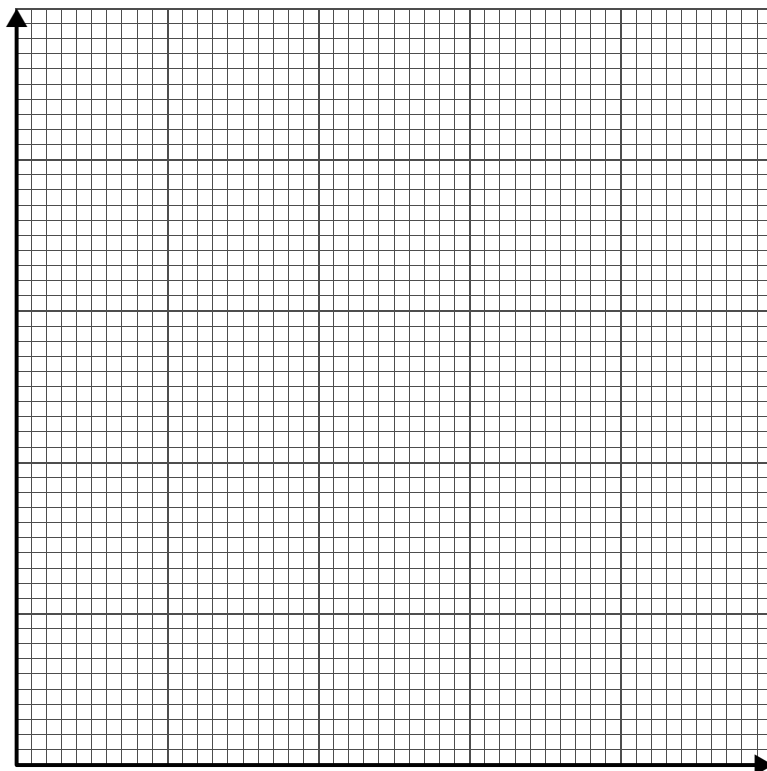
Use **Water park** on page 2 of the Data Sheet.

- 1 The data are reproduced below.

You may use the spare columns for any calculations.

Journey time (m minutes)	Frequency		
$0 < m \leq 30$	0		
$30 < m \leq 40$	15		
$40 < m \leq 45$	50		
$45 < m \leq 50$	70		
$50 < m \leq 60$	53		
$60 < m \leq 90$	12		
$90 < m$	0		

- (a) Draw a histogram on the axes below to represent the data.



(4 marks)

- (b) (i) Find the number of people who took more than 50 minutes to travel to the park that day.

.....

Answer.....

(1 mark)

- (ii) Estimate the number of people who took between 55 and 70 minutes to travel to the park that day.

.....

.....

.....

.....

Answer.....

(2 marks)

7

Turn over for the next question

Turn over ►

SECTION B

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

Use **Debit card transactions** on page 2 of the Data Sheet.

2 The data are reproduced below.

Location	Number of times used	Average amount spent per transaction (£)	
Supermarket	41	35	
Other retailers	26	19	
Petrol station	18	21	
Travel agent or airline	3	482	
Other	12	17	

(a) For these 100 transactions, calculate the mean amount spent per transaction.

You may use the blank column in the table above to help you to calculate any necessary values.

.....

Answer.....
 (4 marks)

(b) John is going out to buy a DVD recorder.

The probability that he will use a debit card to pay for this recorder is 0.4.

What is the probability that he will not use a debit card to pay for this recorder?

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Answer.....
 (2 marks)

Turn over for the next question

Turn over ►

SECTION C

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

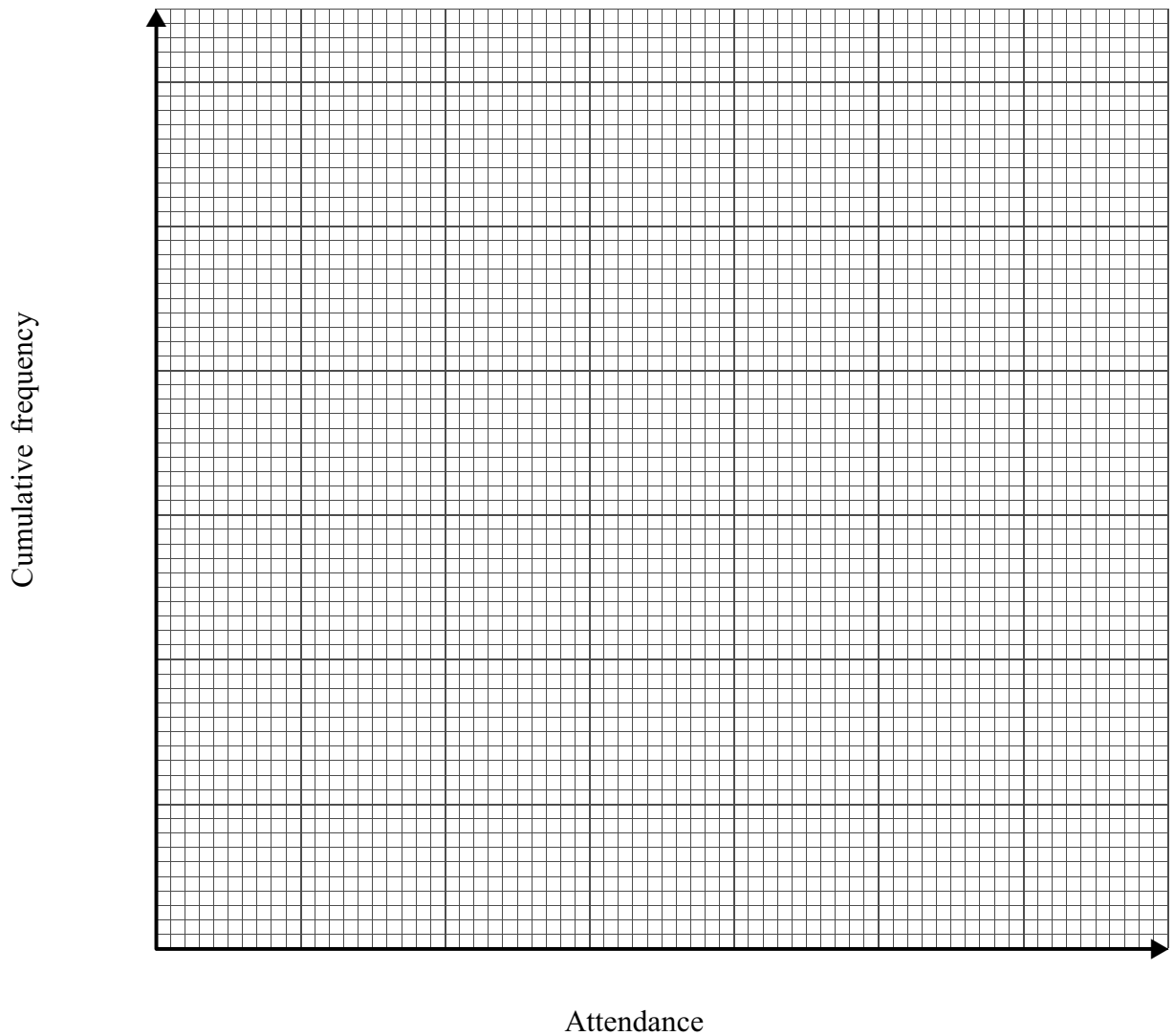
*Use **Attendance at a football match** on page 3 of the Data Sheet.*

3 The data are reproduced below.

You may use the spare column for any calculations.

Attendance	Number of matches	
0 – 10 000	6	
10 001 – 20 000	11	
20 001 – 30 000	53	
30 001 – 40 000	39	
40 001 – 50 000	6	
50 001 – 60 000	3	
60 001 – 70 000	2	

- (a) Draw a cumulative frequency curve to show the data.



(4 marks)

Question 3 continues on the next page

Turn over ►

(b) Use your cumulative frequency curve to find:

(i) the median;

.....

Answer.....
(2 marks)

(ii) the lower quartile;

Answer.....
(1 mark)

(iii) the upper quartile;

Answer.....
(1 mark)

(iv) the interquartile range.

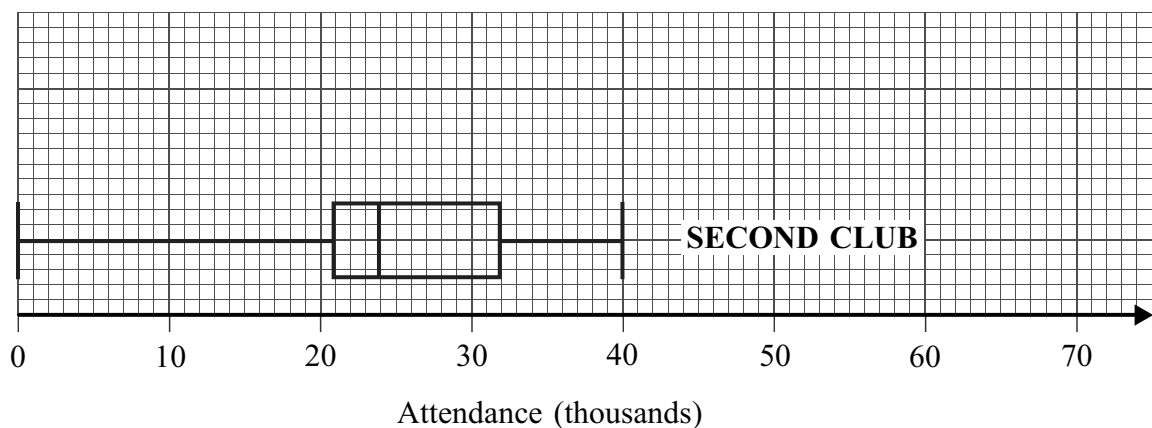
.....

Answer.....
(1 mark)

(c) The attendance at another Premiership club over the last two years has also been recorded.

The data for this second club are shown as a box and whisker diagram below.

Add to the graph below, as another box and whisker diagram, the data you have found for the first club. (3 marks)



- (d) Use the box and whisker diagrams to make two comments about the attendances of the two clubs.

Comment 1

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Comment 2

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(2 marks)

14

Turn over for the next question

Turn over ►

SECTION D

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

Use **Police sergeants** on page 3 of the Data Sheet.

4 (a) Find:

- (i) the mean number of police officers per police force attempting the test;
- (ii) the mean of the five percentage pass rates.

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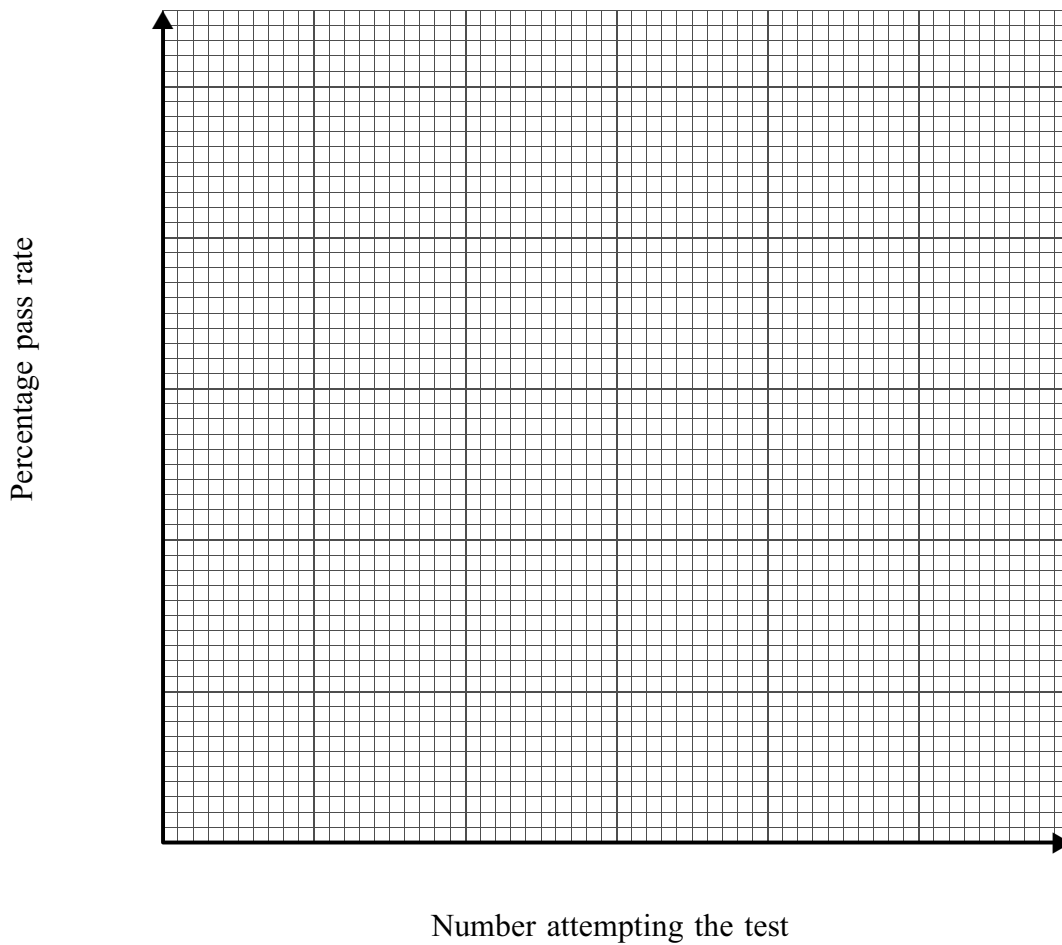
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Answer: (i) the mean number attempting the test is

(ii) the mean of the five percentage pass rates is
(3 marks)

- (b) Plot a scatter diagram of the data.



(3 marks)

- (c) Draw a line of best fit through the mean point.

(2 marks)

- (d) The number attempting the test in Cheshire was 110.

Using your graph, estimate the percentage who passed the test in this police force.

Answer.....
(2 marks)

SECTION E

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

Use **Household spending** on page 4 of the Data Sheet.

- 5 (a) Calculate the weekly spending on 'Housing' in 2004.

.....

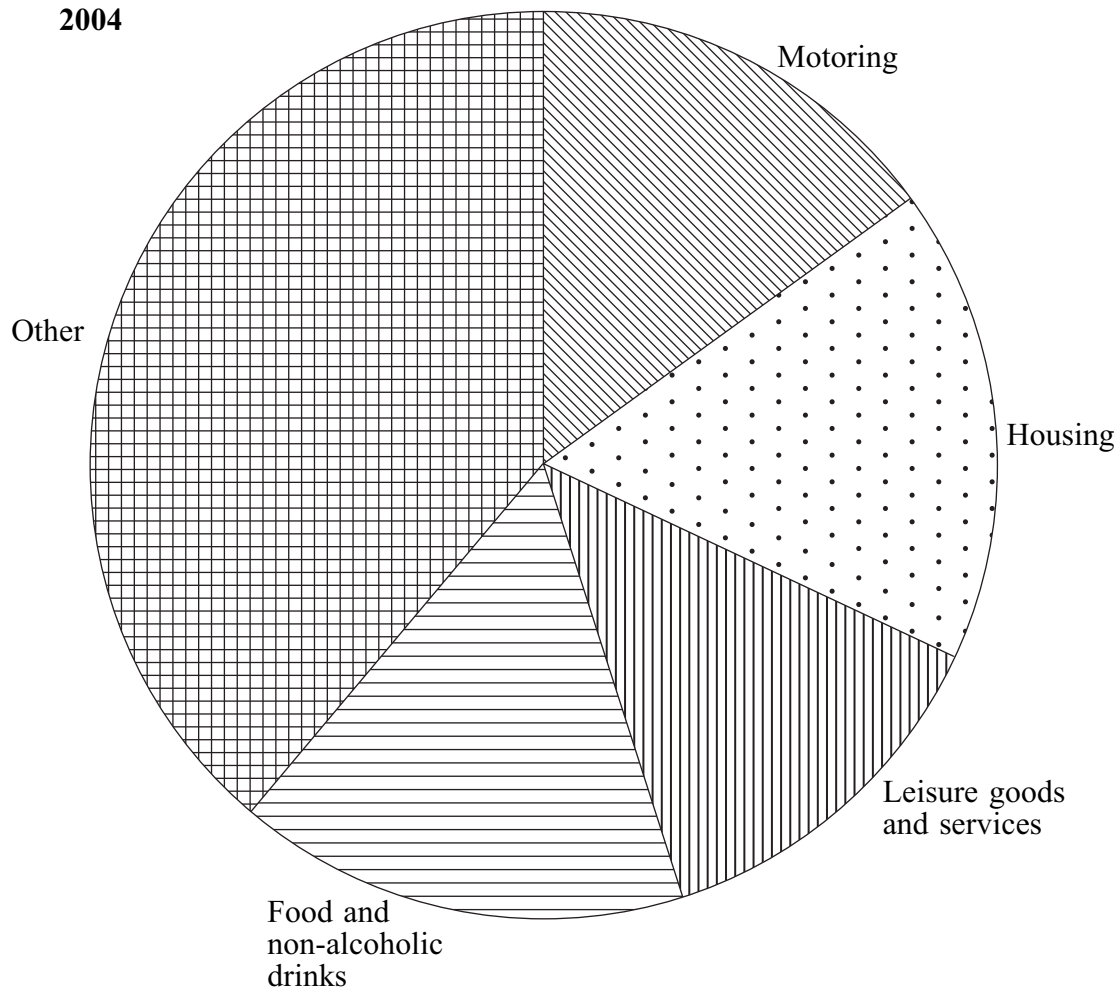
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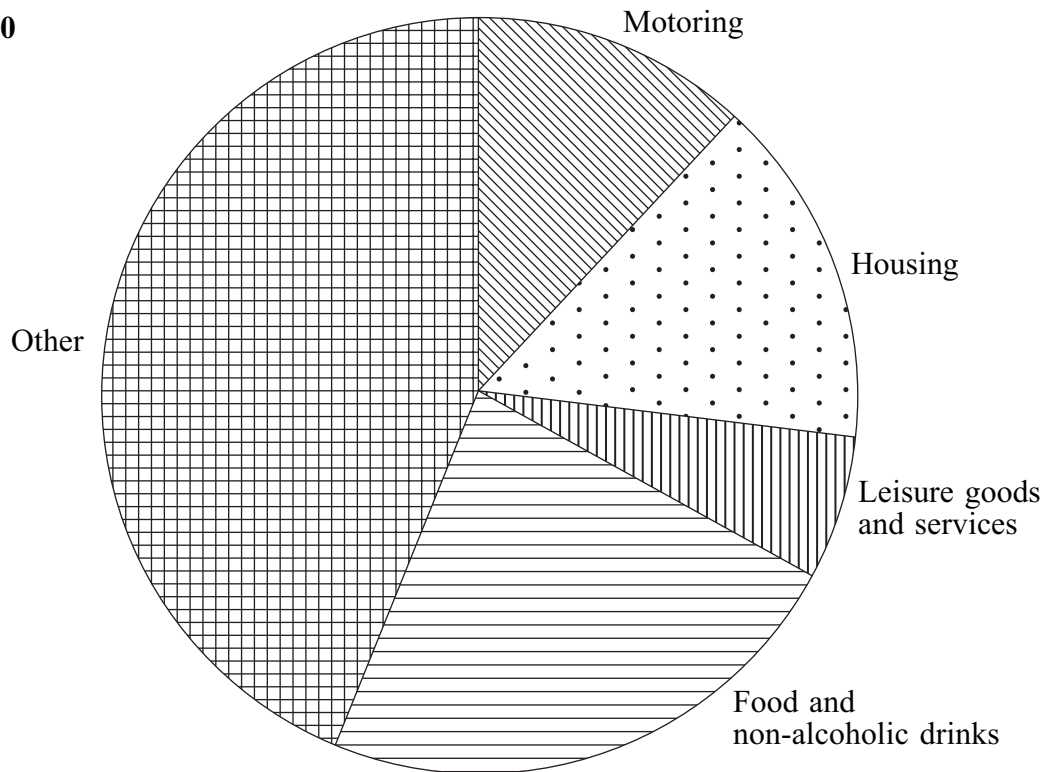
Answer.....
(3 marks)

- (b) The comparative pie charts show the weekly spending (at 2004 prices) in the two years 2004 and 1980.

2004



1980



- (i) Calculate the total weekly spending by an average family in the UK in 1980.

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Answer.....
(4 marks)

- (ii) Calculate the amount spent weekly by an average family on 'Food and non-alcoholic drinks' in the UK in 1980.

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Answer.....
(2 marks)

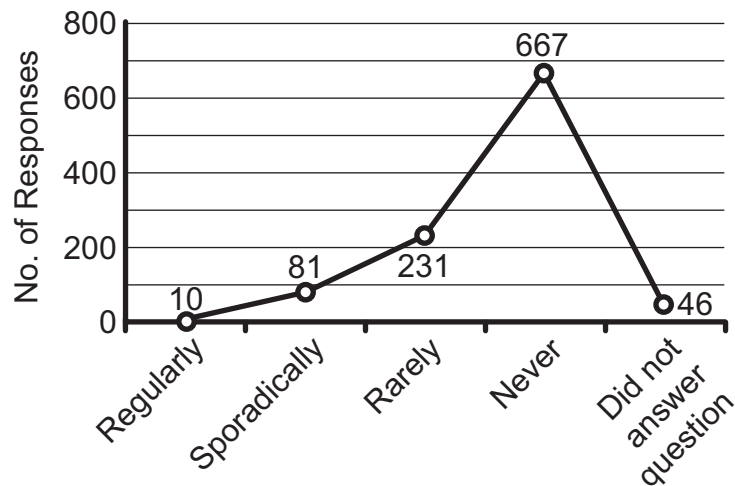
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SECTION F

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

- 6 A company asked 1035 people the frequency with which they checked the company's website. The company produced the graph below to show the responses received.

How frequently do you check the current website?



- (a) State two criticisms of the graph.

Criticism 1

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Criticism 2

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.....

.....

(2 marks)

- (b) For those people who had visited the company's website, calculate the percentage who claimed to be 'regular' visitors.

.....

.....

Answer.....
(2 marks)

4

END OF QUESTIONS

There are no questions printed on this page

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Question 5 Source: OFFICE OF NATIONAL STATISTICS, *News release: Family Spending 2003–2004*

Question 6 Source: AUTHORS' LICENSING & COLLECTING SOCIETY, © ALCS

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