Surname		Other Names	
Centre Number			Candidate Number									
Candidate Signature												

For Examiner's Use

Free-Standing Mathematics Qualification
January 2008
Intermediate Level

AQA
ASSESSMENT and QUALIFICATIONS ALLIANCE

HANDLING AND INTERPRETING DATA 6986/2
Unit 6

Friday 1 February 2008 9.00 am to 10.15 am

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 **Charter airline delay** *on page 2 of the Data Sheet.*

1 (a) Using the data for the five airlines quoted, find:

(i) the mean of the five percentages;

(ii) the mean of the five average delays.

.....

.....

.....

.....

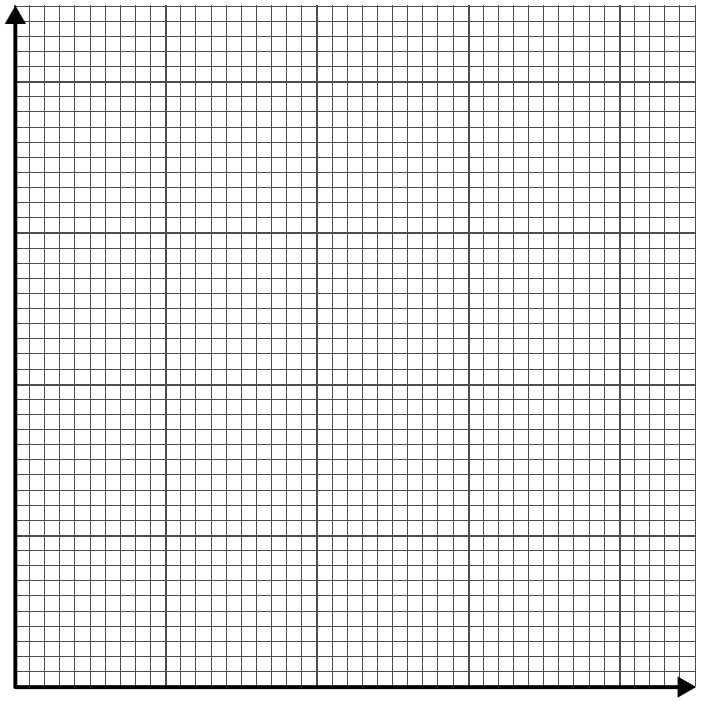
Answer: (i) the mean of the five percentages is .....

(ii) the mean of the five average delays is .....

(3 marks)

(b) Plot a scatter diagram of the data.

Percentage delayed by more than one hour



Average delay (minutes)

(3 marks)

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

(2 marks)

(d) The average delay in the case of Thomas Cook Airlines was 29.3 minutes.

Using your scatter diagram, estimate the percentage of their planes which were more than one hour late.

Answer.....

(2 marks)

10

Turn over for the next question

SECTION B

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

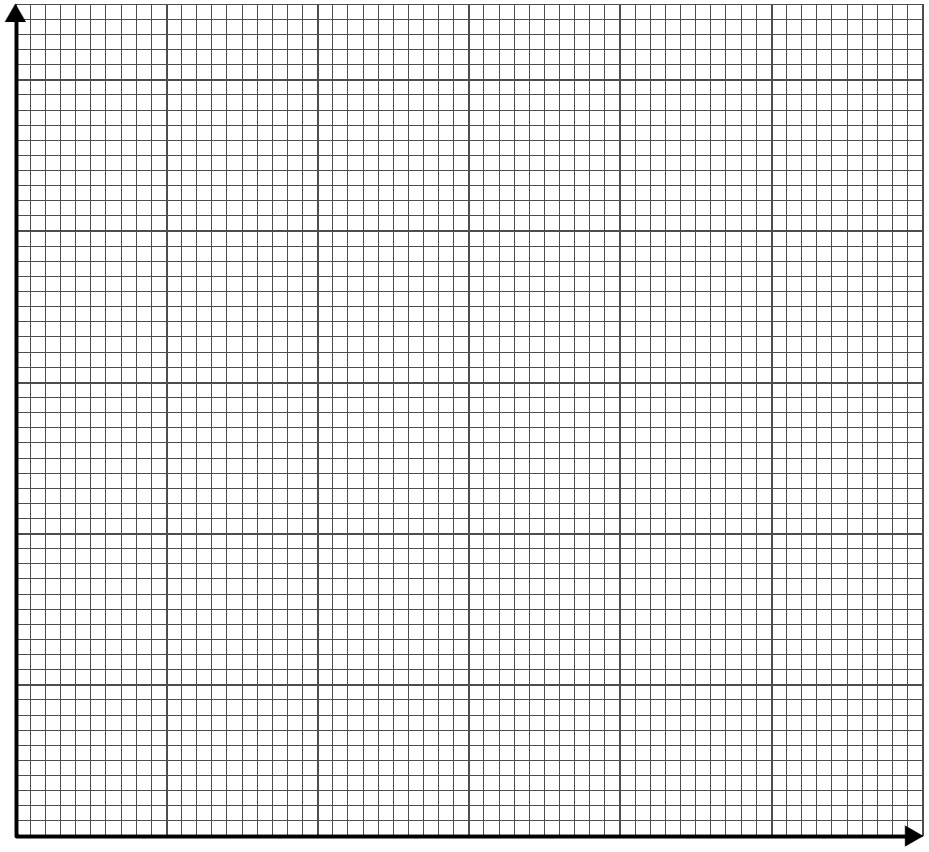
Use **Supermarket** *on page 2 of the Data Sheet.*

2 The data are reproduced below.

You may use the spare columns for any calculation required.

Amount spent, £*a*	**Number of shoppers**		
$0.00 < a \leqslant 10.00$	3		
$10.00 < a \leqslant 20.00$	12		
$20.00 < a \leqslant 30.00$	10		
$30.00 < a \leqslant 35.00$	15		
$35.00 < a \leqslant 40.00$	24		
$40.00 < a \leqslant 50.00$	29		
$50.00 < a \leqslant 60.00$	18		
$60.00 < a \leqslant 80.00$	22		
$80.00 < a \leqslant 90.00$	10		
$90.00 < a \leqslant 100.00$	5		
$100.00 < a \leqslant 110.00$	2		
Over 110	0		

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



(5 marks)

(b) (i) Find the number of people who spent £ 30 or less.

.....

Answer.....

(1 mark)

(ii) Estimate the number of people who spent over £ 70.

.....

.....

.....

.....

Answer.....

(3 marks)

9

Turn over for the next question

3 (a) In one day, 800 people went into the supermarket.

The ratio of the number of these people who bought milk to those who did not buy milk was 3:5 .

How many people bought milk?

.....

.....

.....

Answer.....

(3 marks)

(b) On another day, of the first 250 people into the supermarket, two-fifths were male.

How many of these 250 people were female?

.....

.....

.....

.....

Answer.....

(2 marks)

5

Turn over for the next question

SECTION C

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

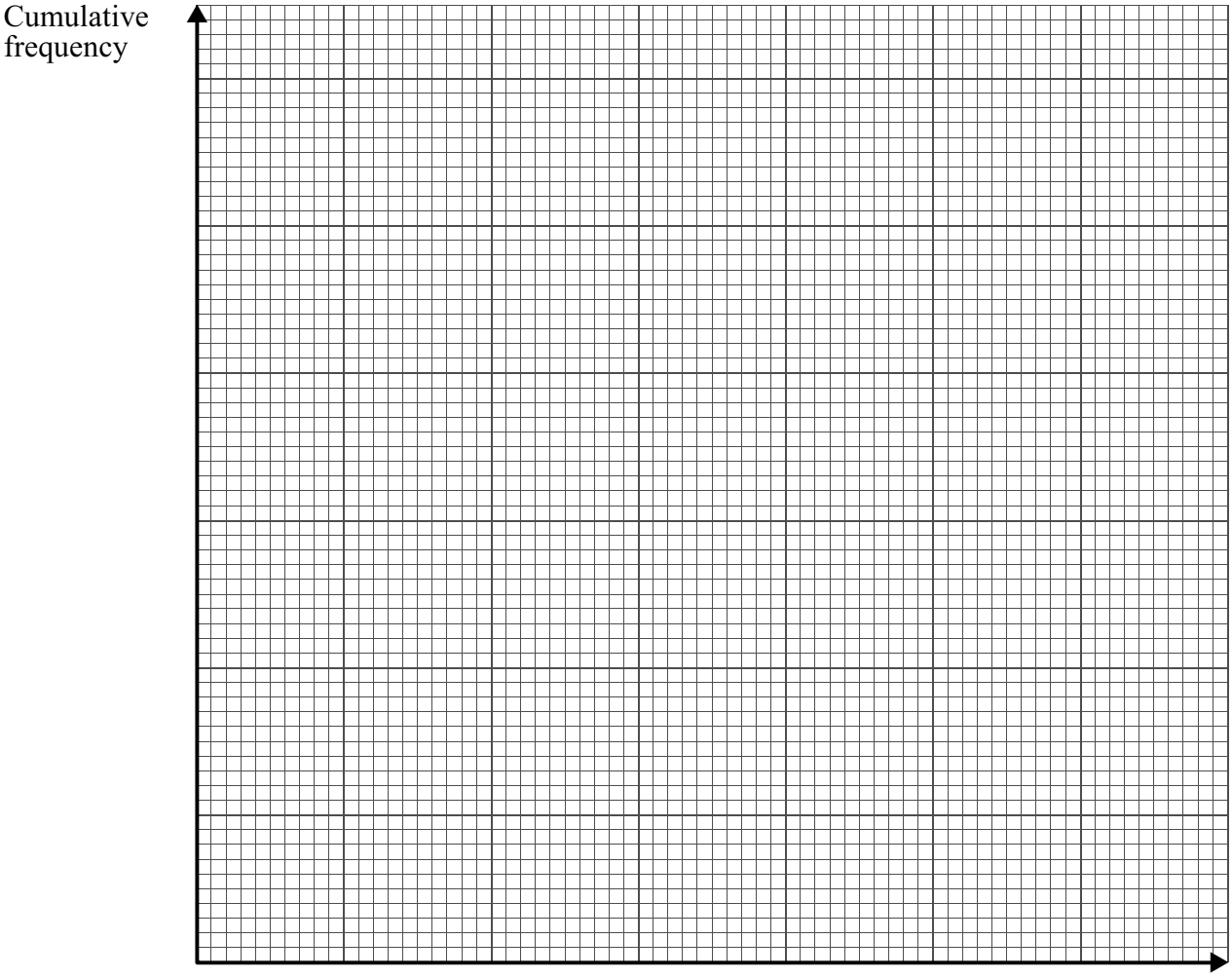
Use **Mobile phones** *on page 3 of the Data Sheet.*

4 The data are reproduced below.

You may use the spare column for any calculation required.

Number of minutes, *t*	**Number of students**	
$0 < t \leqslant 200$	0	
$200 < t \leqslant 250$	1	
$250 < t \leqslant 300$	5	
$300 < t \leqslant 350$	8	
$350 < t \leqslant 400$	16	
$400 < t \leqslant 450$	24	
$450 < t \leqslant 500$	29	
$500 < t \leqslant 550$	22	
$550 < t \leqslant 600$	8	
$600 < t \leqslant 650$	5	
$650 < t \leqslant 700$	2	
Over 700	0	

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



(4 marks)

Question 4 continues on the next page

(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.

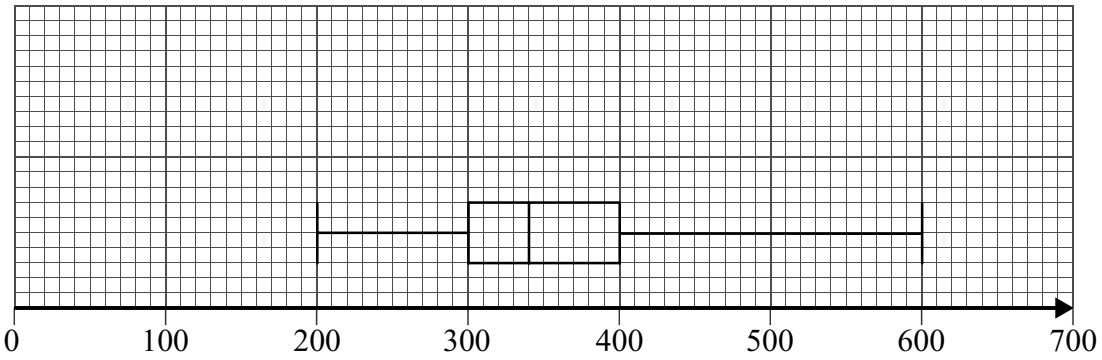
.....

Answer.....
(1 mark)

(c) Alana asked 100 people in a supermarket café for how many minutes they had used their mobile phones in the last month. The box and whisker diagram below represents the data which she found.

Add to the graph below another box and whisker diagram representing the measures found in part (b).

(3 marks)



(d) Use the box and whisker diagrams to make **two** comments about the number of minutes used per month by the two groups of people.

Comment 1

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.....

.....

Comment 2

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.....

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(2 marks)

14

Turn over for the next question

There are no questions printed on this page

SECTION D

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

Use **Television licences** *on pages 3 and 4 of the Data Sheet.*

5 The pie chart on the data sheet shows the number of households in 2005 who watched television with:

black and white only television licences;
colour television licences, watching only non-digital channels;
colour television licences, able to watch digital channels;
concessionary/over-75 licences.

(a) Calculate the angle representing black and white only television licences.
Give your answer to 3 significant figures.

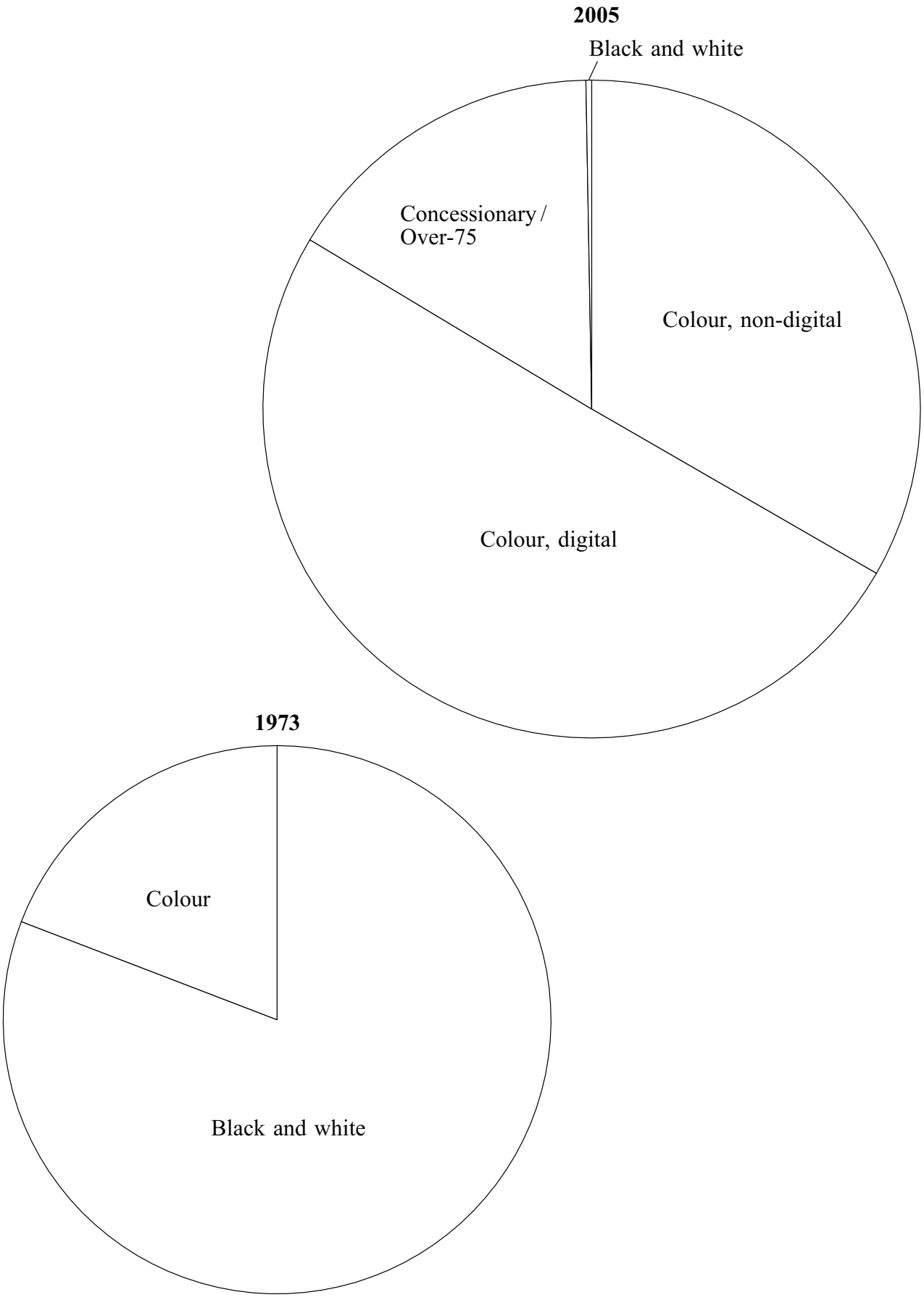
.....

.....

Answer.....
(3 marks)

Question 5 continues on the next page

(b) The comparative pie charts below show the total television licence data for the two years 2005 and 1973.



There were no digital channels in 1973.

(i) What was the total number of TV licences in 1973?

.....

.....

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.....

.....

Answer.....
(4 marks)

(ii) How many households held a colour TV licence in 1973?

.....

.....

.....

Answer.....
(2 marks)

9

Turn over for the next question

SECTION E

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

6 A newspaper article compared the numbers of aircraft and the numbers of passengers carried in the year 2005 by the three largest European 'cut price' airlines.

The table below shows the number of passengers carried by each airline.

Table is not reproduced here owing to third-party copyright constraints.
See below.

The newspaper article illustrated the data by means of a pictogram.

Pictogram is not reproduced here owing to third party copyright constraints.
A full copy of the paper can be obtained by ordering from AQA Publications.
Tel. 0161 953 1170

(a) Make one comment on the pictogram relating to the data for the number of aircraft.

Comment

.....

.....

.....

(1 mark)

(b) Make **two** criticisms of the pictogram relating to the data for the number of passengers.

Criticism 1

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Criticism 2

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.....

(2 marks)

3

END OF QUESTIONS

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Question 1 The Press Association

Question 5 BBC Annual Report and Accounts 2004/2005, BBC © 2005

Question 6 Daily Mail