

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Education
Advanced Subsidiary Examination
June 2015

Statistics

SS1B

Unit Statistics 1B

Wednesday 20 May 2015 9.00 am to 10.30 am

For this paper you must have:

- the blue AQA booklet of formulae and statistical tables.

You may use a graphics calculator.

Time allowed

- 1 hour 30 minutes

- Instructions**
- Use black ink or black ball-point pen. Pencil should only be used for drawing.
 - Fill in the boxes at the top of this page.
 - Answer **all** questions.
 - Write the question part reference (eg (a), (b)(i) etc) in the left-hand margin.
 - You must answer each question in the space provided for that question. If you require extra space, use an AQA supplementary answer book; do **not** use the space provided for a different question.
 - Do not write outside the box around each page.
 - Show all necessary working; otherwise marks for method may be lost.
 - Do all rough work in this book. Cross through any work that you do not want to be marked.
 - The **final** answer to questions requiring the use of tables or calculators should normally be given to three significant figures.

- Information**
- The marks for questions are shown in brackets.
 - The maximum mark for this paper is 75.
 - Unit Statistics 1B has a **written paper only**.

- Advice**
- Unless stated otherwise, you may quote formulae, without proof, from the booklet.
 - You do not necessarily need to use all the space provided.

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
TOTAL	



J U N 1 5 S S 1 B 0 1

Answer **all** questions.

Answer each question in the space provided for that question.

- 1 The number of passengers getting off the 11.45 am train at a railway station on each of 35 days is summarised as follows.

Number of passengers	6	7	8	10	11	12	14	15	18
Number of days	1	1	2	9	7	4	5	3	3

For these data:

- (a) find values for the mode, the median and the interquartile range;
- (b) calculate the value for the mean.

[4 marks]

[2 marks]

QUESTION
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Answer space for question 1



QUESTION
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QUESTION
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Answer space for question 2

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QUESTION
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Answer space for question 3

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QUESTION
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4 (a) Chris shops at his local store on his way to and from work every Friday.

The event that he buys a morning newspaper is denoted by M , and the event that he buys an evening newspaper is denoted by E .

On any one Friday, Chris may buy neither, exactly one or both of these newspapers.

(i) Complete the table of probabilities, printed on the opposite page, where M' and E' denote the events 'not M ' and 'not E ' respectively.

[3 marks]

(ii) Hence, or otherwise, find the probability that, on any given Friday, Chris buys exactly one newspaper.

[2 marks]

(iii) Give a numerical justification for the following statement.

'The events M and E are **not** mutually exclusive.'

[2 marks]

(b) The event that Chris buys a morning newspaper on Saturday is denoted by S , and the event that he buys a morning newspaper on the following day, Sunday, is denoted by T . The event that he buys a morning newspaper on both Saturday and Sunday is denoted by $S \cap T$.

Each combination of the events S and T is independent of any combination of the events M and E . However, the events S and T are **not** independent, with

$$P(S) = 0.85, \quad P(T|S) = 0.20 \quad \text{and} \quad P(T|S') = 0.75$$

Find the probability that, on a particular Friday, Saturday and Sunday, Chris buys:

(i) all four newspapers;

[2 marks]

(ii) none of the four newspapers.

[2 marks]

(c) (i) State, as briefly as possible, in the context of the question, the event that is denoted by $M \cap E' \cap S \cap T'$.

[2 marks]

(ii) Calculate the value of $P(M \cap E' \cap S \cap T')$.

[2 marks]



QUESTION
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(a)(i)

	M	M'	Total
E	0.16		0.28
E'			
Total		0.60	1.00

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QUESTION
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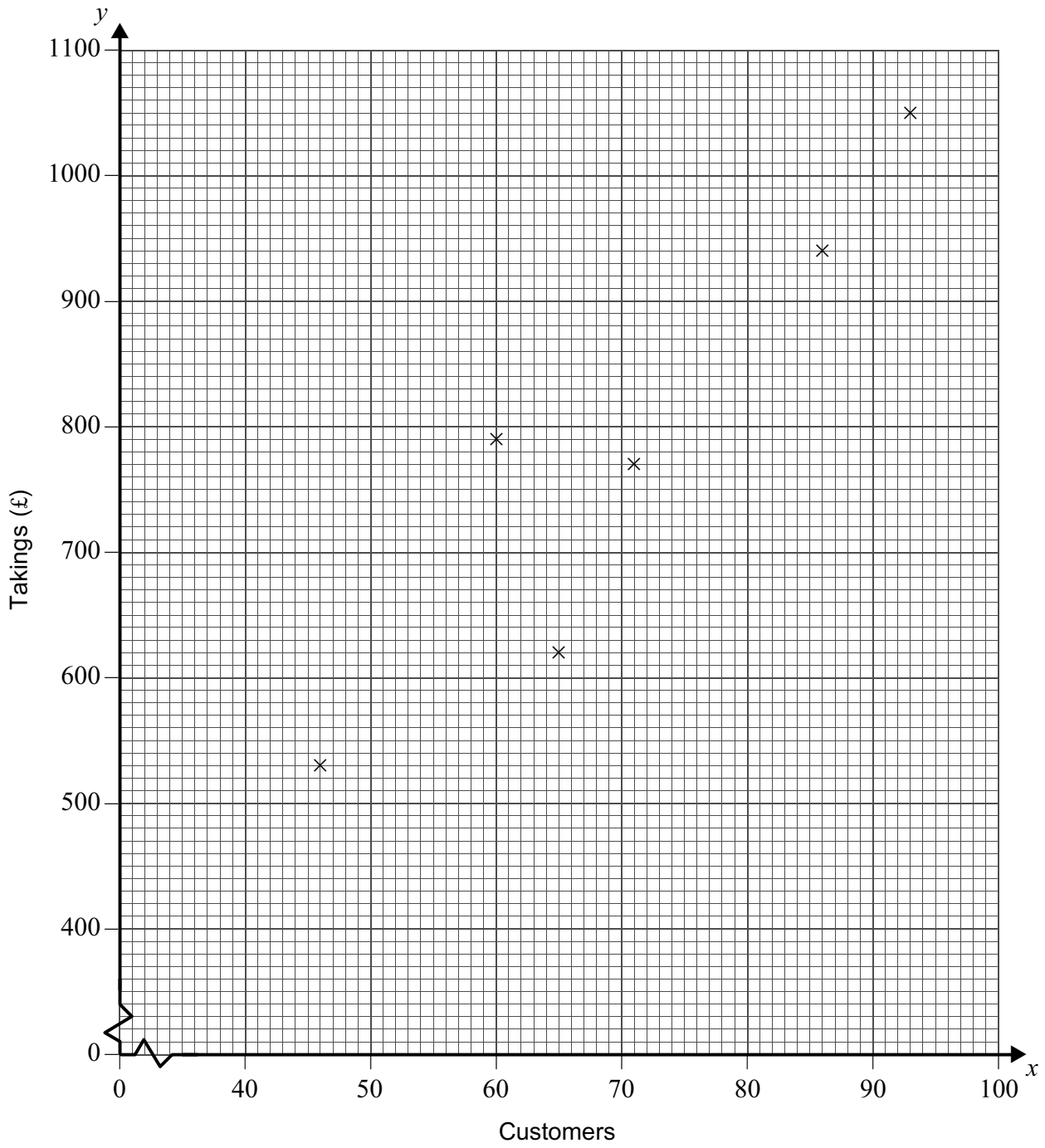
Answer space for question 4

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Answer space for question 5

Butcher's shop



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Answer space for question 7

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END OF QUESTIONS

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