

Statistics GCSE

Paper 1

Edexcel Foundation - 2025

Notier Tier

Variant 4

1ST0/1F

Mark scheme

Visit our website for tutorials on each question.

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Question	Mark Scheme	Mark
1 (a)	[1 mark] 32	1

Question	Mark Scheme	Mark
1 (b)	[1 mark] 46	1

Question	Mark Scheme	Mark				
1	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Thursday <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> </div>					1

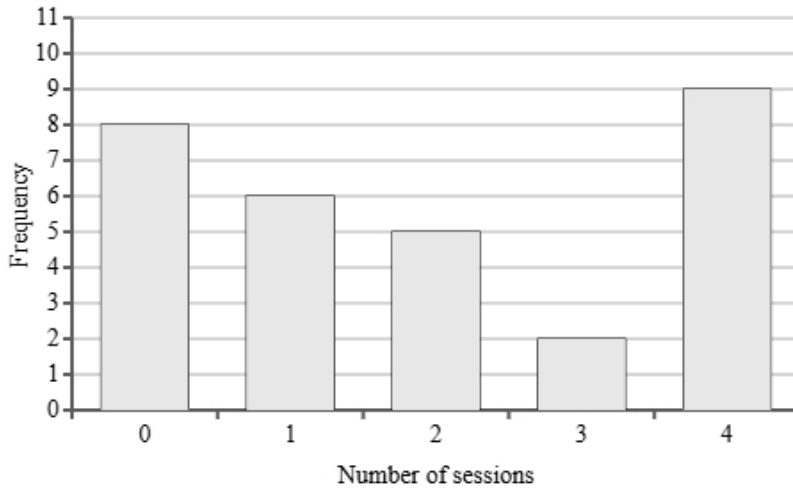
Question	Mark Scheme	Mark
1 (c)	[1 mark] Demonstrate an understanding that it is hard to use the key.	1

Question 1 (c) model answer

Tuesday shows 32 loaves of bread. This would be very difficult to show because 32 has a remainder 2 when divided by 5.

Question	Mark Scheme	Mark
1 (d)	[1 mark] bar of height 2	1

Question 1 (d) model answer



Question	Mark Scheme	Mark
2 (a)	3	1

Question	Mark Scheme	Mark
2 (b)	[1 mark] Correct comment on the validity of the conclusion.	1

Question 2 (b) model answer

More people reported one or less exercise sessions per week.

Question	Mark Scheme	Mark
2 (c)	<p>Two reasons from:</p> <ul style="list-style-type: none"> + easier + cheaper + quicker + less data to handle <p>Allow the converse, if census is mentioned.</p>	2

Question 2 (c) model answer

A sample is cheaper.

A sample is quicker.

Question	Mark Scheme	Mark
3 (a)	[1 mark] Identification of what a sampling frame is.	1

Question 3 (a) model answer

A list of all the members in the population.

Question	Mark Scheme	Mark
3 (b)	[1 mark] Identification of a problem of the sampling frame.	1

Question 3 (b) model answer

Sophia may have difficulty gaining access to the electoral register.

Question	Mark Scheme	Mark
3 (c)	[1 mark] for each from the following (maximum 2 marks): + A pilot survey will help identify problems. + A pilot survey will give an idea of what the results may be. + A pilot survey will test questions are understood/clear. + A pilot survey will give an idea of response rate. + A pilot survey will test questions are working as intended. + A pilot survey will check questions are inoffensive.	2

Question 3 (c) model answer

A pilot survey will test questions are working as intended.

A pilot survey will check questions are inoffensive.

Question	Mark Scheme	Mark
3 (d)	<p>Sampling method</p> <p>[1 mark] for one of:</p> <ul style="list-style-type: none"> + random sample + stratified sample + systematic sample <p>[1 mark] for an appropriate reason.</p> <p>Question</p> <p>[1 mark] for an appropriate question. This must be non-leading and closed with written options for response.</p> <p>[1 mark] for a reason, such as finds people's views, is non-leading or is closed.</p> <p>Statistical diagram</p> <p>[1 mark] for an appropriate diagram, such as bar chart, line chart, pictogram or pie chart.</p> <p>[1 mark] for a reason, such as it shows frequencies (or proportions for pie chart) or it allows comparisons.</p>	6

Question 3 (d) model answer

Sophia should use stratified sampling. This will ensure that the sample is representative of the population.

A question could be:

How satisfied are you with the current appointment booking system?

Very Satisfied Satisfied Neutral Unsatisfied Very Unsatisfied

The question is clear and unbiased, avoiding leading students to a particular answer.

A bar chart can be used to display the data. This is because it shows frequencies and allows for visual comparisons.

Question	Mark Scheme	Mark
3 (e)	[1 mark] for a correct explanation.	1

Question 3 (e) model answer

It was collected by another researcher.

Question	Mark Scheme	Mark
4 (a)	<p>[1 mark] for an advantage from:</p> <ul style="list-style-type: none"> + It is cheaper to collect + It is easily to access a large amount of data + Historical data is easy to access + It is convenient and easy/quicker to collect/access. <p>[1 mark] for an disadvantage from:</p> <ul style="list-style-type: none"> + Cannot control the quality of the data + The data may not be in the correct format + The data may be out of date 	2

Question 4 (a) model answer

Advantage

It is convenient and easy to collect.

Disadvantage

The data may not be in required form.

Question	Mark Scheme	Mark
4 (b)	[1 mark] for a correct description	1

Question 4 (b) model answer

All members of the population have the same likelihood of selection.

Question	Mark Scheme	Mark
5 (a)	[1 mark] attempt to add numbers and divide by 10 [1 mark] 60 hours	2

Question	Mark Scheme	Mark
5 (b)	[1 mark] 36	1

Question	Mark Scheme	Mark
5 (c)	[1 mark] Correct outlier of 90 [1 mark] Correct explanation	2

Question 5 (c) model answer

The value is significantly higher than the rest.

Question	Mark Scheme	Mark
5 (d)	[1 mark] The mean is lower. [1 mark] Correct explanation.	2

Question 5 (d) model answer

The mean is less. This is because the value that Liam removed is higher than all the other values.

Question	Mark Scheme	Mark
5 (e)	[1 mark] for each correct description (maximum two)	2

Question 5 (e) model answer

Small sample size.

Sample might not be representative.

Question	Mark Scheme	Mark
5 (f)	[1 mark] Correct reason.	1

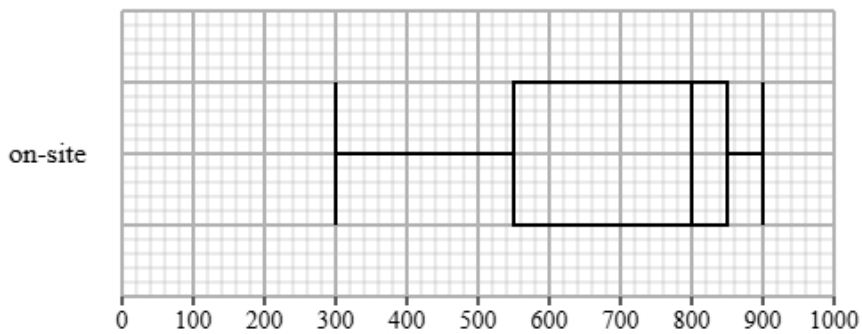
Question 5 (f) model answer

'Own outright' has the largest sector.

Question	Mark Scheme	Mark
6 (a)	<p>[1 mark] Finding angle of 'Own outright' is 122°</p> $\frac{137}{360} \times 130$ <p>[1 mark] 50 thousand</p>	2

Question	Mark Scheme	Mark
6 (b)	<p>[1 mark] A box with two whiskers drawn with at least 3 correct values</p> <p>[1 mark] Fully correct</p>	2

Question 6 (b) model answer



Question	Mark Scheme	Mark
7 (a)	[1 mark] Correct comparison of the medians [1 mark] Correct comparison of the IQR/range [1 mark] Correct comparison of the skews [1 mark] Correct contextual interpretation comparing medians or IQR/ranges or skew	4

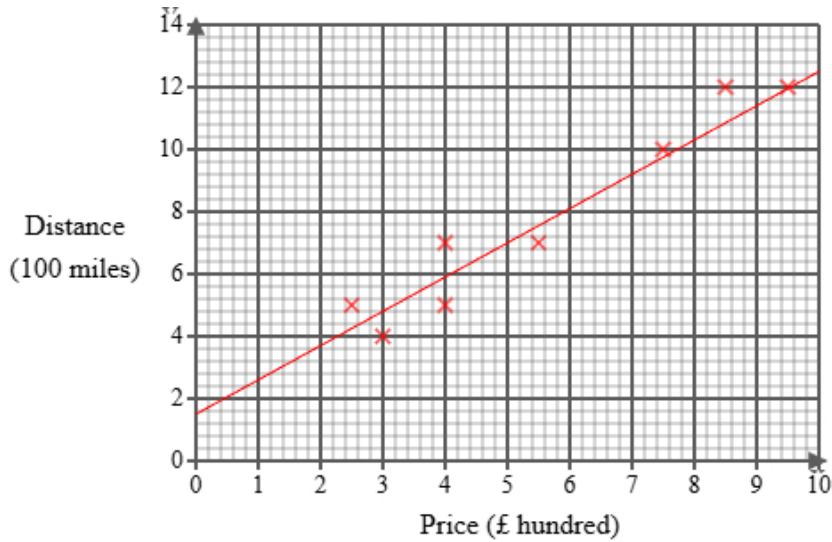
Question 7 (a) model answer

The median steps for remote workers is lower than on-site workers. The IQR for the steps of the remote workers is lower than on-site workers. The skew for the steps of the remote workers is symmetrical and the skew for the on-site workers is negative. The remote workers on average walk less than the on-site workers.

Question	Mark Scheme	Mark
7 (b)	[1 mark] for 700 miles	1

Question	Mark Scheme	Mark
8 (a)	[1 mark] correct line of best fit drawn.	1

Question 8 (a) model answer



Question	Mark Scheme	Mark
8 (b)	[1 mark] positive [1 mark] strong [1 mark] As the price increases the journey distance increases.	3

Question	Mark Scheme	Mark
8 (c)	[1 mark] for not appropriate [1 mark] for a reason	2

Question 8 (c) model answer

This is not appropriate because the point is after the data and the trend may not continue.

Question	Mark Scheme	Mark
8 (d)	[1 mark] for each reason (maximum 2 marks)	2

Question 8 (d) model answer

Grouped data can help to spot patterns in the data.

Grouped data is easier to represent on graphs.

Question	Mark Scheme	Mark
9 (a)	[1 mark] for a reason	1

Question 9 (a) model answer

Grouped data can only calculate estimates of statistical values.

Question	Mark Scheme	Mark
9 (b)	[2 marks] for a conclusion and two reasons. <i>or</i> [1 mark] for a reason and conclusion, or two reasons with no conclusion.	2

Question 9 (b) model answer

In Table A, all the data is concentrated into three groups. in Table B, the table starts at 200 and the lowest value is 203 ms and ends at 300 with the highest value at 281 ms. Noah's claim is justified.

Question	Mark Scheme	Mark
9 (c)	[1 mark] for $\sum ft = 29120$ [1 mark] for $\frac{\sum ft}{120} = \frac{29120}{120} = (242.666\dots)$ [1 mark] for 242.7	3

Question	Mark Scheme	Mark
9 (d)	[1 mark] for a correct description which must include both events	1

Question 9 (d) model answer

The number of customers who bought a product the electronics shop **and** a clothing shop

Question	Mark Scheme	Mark
10 (a)	<p>[1 mark] for $P(B) = \frac{39}{100}$</p> <p>[1 mark] for use of conditional probability to find $P(B A)$</p> <p>[1 mark] for $P(B A) = \frac{9}{49}$</p> <p>Explanation</p> <p>[1 mark] for $\frac{39}{100} \neq \frac{9}{49}$</p> <p>[1 mark] for correct conclusion based on their answers</p>	5

Question 10 (a) model answer

$$\text{amount in B} = 9 + 30$$

$$= 39$$

$$\text{total amount} = 100$$

$$P(B) = \frac{\text{amount in B}}{\text{total amount}}$$

$$P(B) = \frac{39}{100}$$

$$P(B | A) = \frac{P(A \text{ and } B)}{P(A)}$$

$$P(B | A) = \frac{\frac{9}{100}}{\frac{100}{49}}$$

$$P(B | A) = \frac{9}{49}$$

$\frac{39}{100} \neq \frac{9}{49}$ so A and B are not independent

Question	Mark Scheme	Mark
10 (b)	[1 mark] 4.1% to 6.0% increase	1

Question	Mark Scheme	Mark
11 (a)	[1 mark] 1	1

Question	Mark Scheme	Mark
11 (b)	[1 mark] Explanation that shows an understanding that we have percentages not numbers.	1

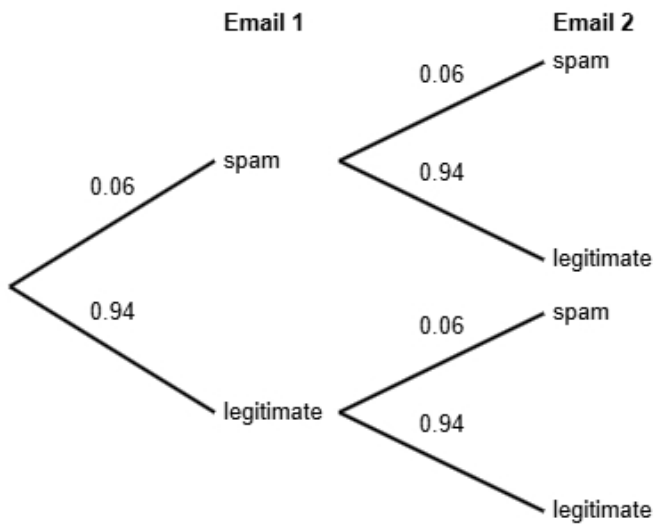
Question 11 (b) model answer

The map does not show the increases and decreases as amounts.

Question	Mark Scheme	Mark
11 (c)	[1 mark] choropleth (map)	1

Question	Mark Scheme	Mark
11 (d)	[1 mark] 0.94 in correct position for Email 1. [1 mark] 0.06, 0.94, 0.06 and 0.94 in correct positions for Email 2.	2

Question 11 (d) model answer



Question	Mark Scheme	Mark
12 (a)	[1 mark] 0.8836	2

Question	Mark Scheme	Mark
12 (b)	<p>[1 mark] for one correct product using their '0.94' or subtracting a not-wanted product from 1</p> <p>[1 mark] for 0.1128 or 11.28%</p> <p>[1 mark] for 'correct' ft probability and conclusion based on their probability</p>	3

Question 12 (b) model answer

$$\begin{aligned}
 P(\text{spam AND legitimate}) &= 0.06 \times 0.94 \\
 &= 0.0564 \\
 P(\text{exactly one email is spam}) &= 0.0564 \times 2 \\
 &= 0.1128 \\
 0.1128 &= 11.28\% \\
 11.28\% &< 12\%
 \end{aligned}$$

The probability that exactly one email is spam is less than 12%, so Maria is correct.

Question	Mark Scheme	Mark
12 (c)	<p>[1 mark] for correct comment on the type of data, such as discrete, whole numbers, integers, etc.</p>	1

Question 12 (c) model answer

Because number of traffic accidents reported in a neighbourhood is discrete.

Question	Mark Scheme	Mark
13 (a)	<p>[1 mark] 1</p>	1

Question	Mark Scheme	Mark
13 (b)	<p>Part i [1 mark] 0</p> <p>Part ii [1 mark] Subtracts 50 from 65. [1 mark] 15</p>	3

Question	Mark Scheme	Mark
13 (c)	[1 mark] 6	1

Question	Mark Scheme	Mark
13 (d)	[1 mark] for a correct reason	1

Question 13 (d) model answer

The range is 6, so the IQR must be less than 6.