

Statistics GCSE

Paper 2

2025

Edexcel Foundation

Variant 3

1ST0/2F





Mark scheme

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| Question | Mark Scheme | Mark |
|----------|--|------|
| 1 (a) | <p>[2 marks] All frequencies are correct (8, 6, 3, 3)</p> <p>OR</p> <p>[1 mark] At least one frequency or tally correct</p> | 2 |

Question 1 (a) model answer

| Sport | Tally | Frequency |
|------------|---|-----------|
| Football |  | 8 |
| Basketball |  | 6 |
| Tennis |  | 3 |
| Swimming |  | 3 |

| Question | Mark Scheme | Mark |
|----------|-------------|------|
| 1 (b) | [1 mark] 20 | 1 |

| Question | Mark Scheme | Mark |
|----------|---|------|
| 1 (c) | [1 mark] More children selected Football than Swimming. | 1 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 1 (d) | [1 mark] for one of the following: + Data is not numbers/qualitative + Not possible to find the median or mean | 1 |

Question 1 (d) model answer

The data is not numeric.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 1 (e) | [1 mark] for one of the following: + easier to read/see differences in/analyse data + more organised | 1 |

Question 1 (e) model answer

It is easier to analyse the data.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 2 (a) | [1 mark] Female [1 mark] 18-26 years old | 2 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 2 (b) | [1 mark] statement that describes downward trend between attending virtual events and age (accept negative correlation). | 1 |

Question 2 (b) model answer

The proportion of people attending virtual events decreases with age.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 2 (c) | [1 mark] valid comparison using amounts, OR words such as 'higher' or 'more' | 1 |

Question 2 (c) model answer

The percentage of females who attended virtual events was 52% but the percentage for males was higher at 56%

| Question | Mark Scheme | Mark |
|----------|--------------|------|
| 3 (a) | [1 mark] 9.7 | 1 |

| Question | Mark Scheme | Mark |
|----------|----------------|------|
| 3 (b) | [1 mark] 20-29 | 1 |

| Question | Mark Scheme | Mark |
|-----------------|--------------------|-------------|
| 3 (c) | [1 mark] 30-39 | 1 |

| Question | Mark Scheme | Mark |
|-----------------|----------------------------------|-------------|
| 3 (d) | [1 mark] There are more females. | 1 |

| Question | Mark Scheme | Mark |
|-----------------|---|-------------|
| 3 (e) | [1 mark] The figures have been rounded. | 1 |

| Question | Mark Scheme | Mark |
|-----------------|---|-------------|
| 4 (a) | [1 mark] any statement that implies collecting more data/having a larger sample | 1 |

Question 4 (a) model answer

Collect more data.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 4 (b) | <p>[1 mark] higher proportion of £10 tickets sold at new location.</p> <p>[1 mark] an explanation why a higher proportion of people spent more. For example:</p> <ul style="list-style-type: none"> + the new city may be more affluent + people may have been more keen to spend more on the opening weekend + this data from both of the salsa clubs was not gathered at the same time. | 2 |

Question 4 (b) model answer

There was a higher proportion of £10 tickets at the new location. This could have been because at an opening weekend people may be happier to spend more on a ticket.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 5 (a) | <p>[2 marks] chicken wraps and apple juice: 49, veggie wraps total: 85 AND water total: 80 OR [1 mark] one value correct</p> | 2 |

Question 5 (a) model answer

| | apple juice | water | Total |
|---------|-------------|-------|-------|
| chicken | 49 | 38 | 87 |
| veggie | 43 | 42 | 85 |
| Total | 92 | 80 | 172 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 5 (b) | Part i [1 mark] $\frac{87}{172}$ oe Part ii [1 mark] $\frac{43}{172}$ oe Part iii [2 marks] $\frac{80}{172}$ oe OR [1 mark] 80 or 172 - 92 or $1 - \frac{92}{172}$ | 4 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 5 (c) | [1 mark] yes / order more apple juice than water [1 mark] + sold more apple juice than water + sold 92 apple juice and 80 water + apple juice was more popular | 2 |

Question 5 (c) model answer

Yes, Noah should buy more bottles of apple juice than water because he sold more apple juice than water.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 6 (a) | Two reasons from: + easier + cheaper + quicker + less data to handle Allow the converse, if census is mentioned. | 2 |

Question 6 (a) model answer

A sample is cheaper.

A sample is quicker.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 6 (b) | [1 mark] Identification of what a sampling frame is. | 1 |

Question 6 (b) model answer

A list of all the members in the population.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 6 (c) | [1 mark] Identification of a problem of the sampling frame. | 1 |

Question 6 (c) model answer

The staff will not be included.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 6 (d) | <p>[1 mark] for each from the following (maximum 2 marks):</p> <ul style="list-style-type: none"> + 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 6 (d) model answer

A pilot survey will test questions are working as intended.

A pilot survey will give an idea of response rate.

| Question | Mark Scheme | Mark |
|----------|------------------------------------|------|
| 7 (a) | [1 mark] for a correct description | 1 |

Question 7 (a) model answer

Each individual in the population has an equal chance of being chosen.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 7 (b) | <p>[1 mark] Correct outlier of 120</p> <p>[1 mark] Correct explanation</p> | 2 |

Question 7 (b) model answer

The value is far higher than the other pieces of data.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 7 (c) | [1 mark] The mean is lower. [1 mark] Correct explanation. | 2 |

Question 7 (c) model answer

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

| Question | Mark Scheme | Mark |
|----------|---|------|
| 7 (d) | [1 mark] for each correct description (maximum two) | 2 |

Question 7 (d) model answer

Small sample size.

Does not include all of the data.

| Question | Mark Scheme | Mark |
|----------|--------------------------|------|
| 8 (a) | [1 mark] Correct reason. | 1 |

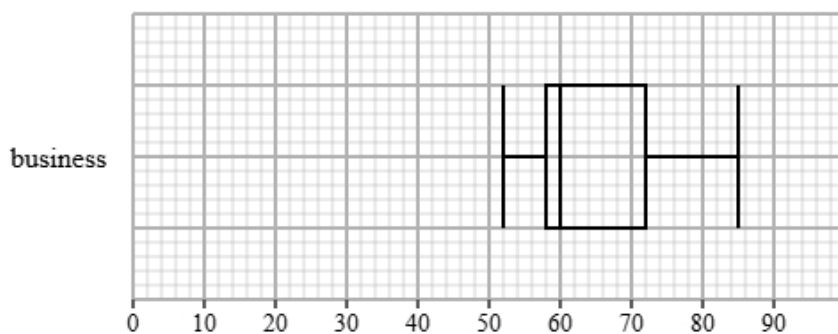
Question 8 (a) model answer

'Level 4+' has the largest sector.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 8 (b) | <p>[1 mark] Finding angle of 'Level 4+' is 122°</p> $\frac{122}{360} \times 60$ <p>[1 mark] 20 million</p> | 2 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 9 (a) | <p>[1 mark] A box with two whiskers drawn with at least 3 correct values</p> <p>[1 mark] Fully correct</p> | 2 |

Question 9 (a) model answer



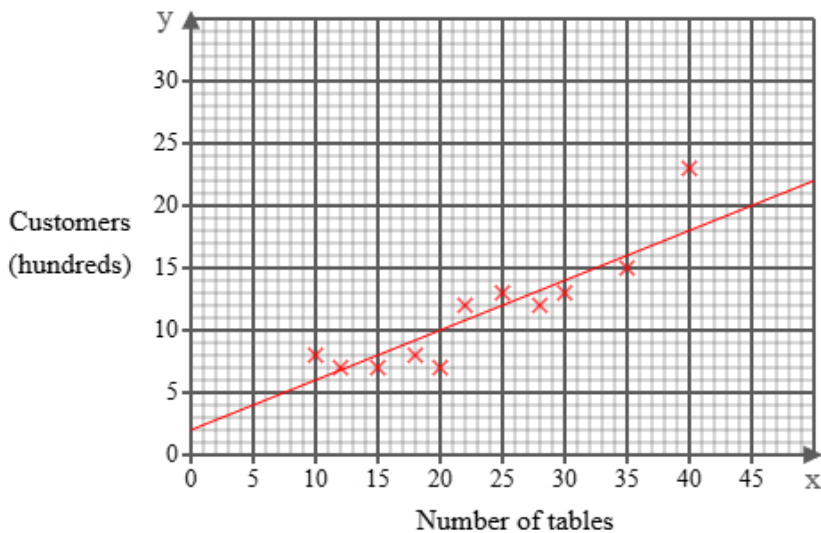
| Question | Mark Scheme | Mark |
|----------|--|------|
| 9 (b) | [1 mark] Correct comparison of the medians [1 mark] Correct comparison of the IQR/range [1 mark] Correct comparison of the skews [1 mark] Correct contextual interpretation comparing medians or IQR/ranges or skew | 4 |

Question 9 (b) model answer

The median marks for physics students is greater than business students. The IQR for the marks of the physics students is greater than business students. The skew for the marks of the physics students is symmetrical and the skew for the business students is positive. The physics students are on average did better on the statistics test than the business students.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 10 (a) | [1 mark] correct line of best fit drawn. | 1 |

Question 10 (a) model answer



| Question | Mark Scheme | Mark |
|----------|---|------|
| 10 (b) | [1 mark] positive [1 mark] strong [1 mark] As the tables increases the number of customers increases. | 3 |

| Question | Mark Scheme | Mark |
|----------|---|------|
| 10 (c) | [1 mark] for not appropriate [1 mark] for a reason | 2 |

Question 10 (c) model answer

This is not appropriate because the point is outside the range of the data.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 11 (a) | [1 mark] for each reason (maximum 2 marks) | 2 |

Question 11 (a) model answer

Grouped data can help to spot patterns in the data.

Grouped data is easier to read.

| Question | Mark Scheme | Mark |
|----------|--|------|
| 11 (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 11 (b) model answer

In Table A, there are no households in two of the groups, so these groups are not needed. in Table B, each group has a smaller class width, showing more detail. Emma's claim is justified.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 11 (c) | [1 mark] for $\sum fp = 18520$ [1 mark] for $\frac{\sum fp}{250} = \frac{18520}{250} = (74.08)$ [1 mark] for 74.1 | 3 |

| Question | Mark Scheme | Mark |
|----------|---|------|
| 12 (a) | [1 mark] for a correct description which must include both events | 1 |

Question 12 (a) model answer

The number of cars sold in a dealership **and** are priced above £30,000

| Question | Mark Scheme | Mark |
|----------|--|------|
| 12 (b) | <p>[1 mark] for $P(B) = \frac{19}{40}$</p> <p>[1 mark] for use of conditional probability to find $P(B A)$</p> <p>[1 mark] for $P(B A) = \frac{5}{17}$</p> <p>Explanation</p> <p>[1 mark] for $\frac{19}{40} \neq \frac{5}{17}$</p> <p>[1 mark] for correct conclusion based on their answers</p> | 5 |

Question 12 (b) model answer

$$\begin{aligned} \text{amount in B} &= 5 + 14 \\ &= 19 \end{aligned}$$

$$\text{total amount} = 40$$

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

$$P(B) = \frac{19}{40}$$

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

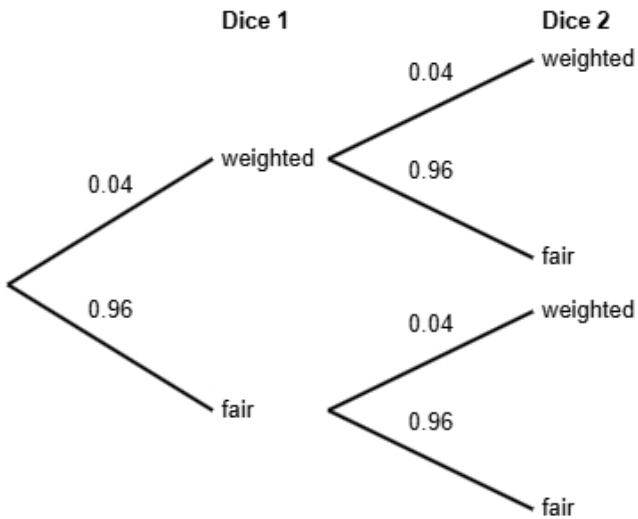
$$P(B | A) = \frac{5}{\frac{40}{17}}$$

$$P(B | A) = \frac{5}{17}$$

$\frac{19}{40} \neq \frac{5}{17}$ so A and B are not independent

| Question | Mark Scheme | Mark |
|----------|--|------|
| 13 (a) | [1 mark] 0.96 in correct position for Dice 1. [1 mark] 0.04, 0.96, 0.04 and 0.96 in correct positions for Dice 2. | 2 |

Question 13 (a) model answer



| Question | Mark Scheme | Mark |
|----------|-----------------|------|
| 13 (b) | [1 mark] 0.9216 | 2 |

| Question | Mark Scheme | Mark |
|----------|--|------|
| 13 (c) | <p>[1 mark] for one correct product using their '0.96' or subtracting a not-wanted product from 1</p> <p>[1 mark] for 0.0768 or 7.68%</p> <p>[1 mark] for 'correct' ft probability and conclusion based on their probability</p> | 3 |

Question 13 (c) model answer

$$\begin{aligned}
 P(\text{weighted AND fair}) &= 0.04 \times 0.96 \\
 &= 0.0384 \\
 P(\text{exactly one dice is weighted}) &= 0.0384 \times 2 \\
 &= 0.0768 \\
 0.0768 &= 7.68\% \\
 7.68\% &< 8\%
 \end{aligned}$$

The probability that exactly one dice is weighted is less than 8%, so Jack is correct.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 14 (a) | [1 mark] for correct comment on the type of data, such as discrete, whole numbers, integers, etc. | 1 |

Question 14 (a) model answer

Because number of power outages recorded in a small town is discrete.

| Question | Mark Scheme | Mark |
|----------|---|------|
| 14 (b) | <p>Part i</p> <p>[1 mark] 0</p> <p>Part ii</p> <p>[1 mark] Subtracts 25 from 50.</p> <p>[1 mark] 25</p> | 3 |

| Question | Mark Scheme | Mark |
|-----------------|--------------------|-------------|
| 14 (c) | [1 mark] 6 | 1 |

| Question | Mark Scheme | Mark |
|-----------------|-------------------------------|-------------|
| 14 (d) | [1 mark] for a correct reason | 1 |

Question 14 (d) model answer

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