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# GCSE STATISTICS

8382/1H Paper 1 Higher  
Report on the Examination

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This was the third full examination series for this specification. The vast majority of questions were attempted by most students but with varying degrees of success.

Topics that were covered in earlier papers were well answered in general eg probability trees and population pyramids. Newer topics eg using standard deviations to calculate a probability and calculating and using a double mean point proved more challenging.

A number of unnecessary marks were lost through students not reading the questions correctly but this was reflected in the final mark scheme.

Students are reminded to show any working as many students failed to do this and as a result were awarded fewer marks.

### **Question 1**

This question was answered very well.

### **Question 2**

This question was answered very well.

### **Question 3**

This question was reasonably well answered but the majority of students chose the diagram which showed a positive skew.

### **Question 4**

This question was not well answered. The most common answer given was  $P(A | B) = P(A)$ .

### **Question 5**

This question was common to the foundation tier.

Part (a) was answered very well.

Part (b) was answered well. A common error was to ignore the option for shopping online on both days. This resulted in the awarding of a single mark.

### **Question 6**

This question was common to the foundation tier.

This question was reasonably well answered with the vast majority of students being awarded at least a single mark. Common errors seen included calculating the area of the rectangles rather than simply reading off the values for the frequencies or dividing a correctly valuated total by the number of groups rather than the total frequency.

### **Question 7**

This question was common to the foundation tier.

Part (a) was not well answered with over half of students failing to be awarded any marks. Many students did not show their working and as a result lost the opportunity to be awarded at least one mark if their final answer was incorrect.

Part (b)(ii) proved difficult for many students. The most common errors were not plotting their double mean point or not ensuring that their line of best fit passed through their plotted double mean point.

Part (c) was not answered well with over half of students failing to be awarded any marks.

### **Question 8**

This question was common to the foundation tier.

Part (a) was reasonably well answered. The most common reason for only being awarded a single mark was giving two very similar reasons eg take samples from a variety of places and take a random sample.

Part (b) was reasonably well answered. The most common correct answer was to resample from the previous five places.

### **Question 9**

This was well answered. The most common correct answer referred to it being impossible for the value 'one' to be obtained.

### **Question 10**

Part (a) was not well answered with less than 50% of students scoring. Most answers referenced just the price and failed to mention that the map showed the location or distance from the centre.

Part (b) was well answered.

Part (c) was poorly answered. Incorrect answers were usually generic facts about the median rather being specific to this context.

### **Question 11**

Part (a) was well answered.

Part (b) proved to be challenging for many students although the majority were awarded at least one mark. A common error was failing to give the two values in a comparable form.

Part (c) was reasonably well answered. There were many different approaches seen but all could achieve both marks if correct.

### **Question 12**

Part (a) was answered well. Common errors were to calculate the number of females rather than males or assuming that the population given was that of the males and not the entire population. Both of these errors could still result in the award of a single mark. A significant number of students struggled to calculate 14.8%.

Part (b) was well answered.

### **Question 13**

Part (a) proved challenging to many students.

Part (b) (i) also proved challenging with a large number of students failing to attempt any response.

Part (b) (ii) was well answered with the vast majority of students scoring at least one mark. Few students showed any working and a significant number of students calculated percentages but then failed to calculate any angles.

Part (b) (iii) was reasonably well answered. The common error was to discuss 'number of voters' rather than the 'proportion of voters'.

### **Question 14**

Part (a) was fairly well answered. The most common error seen was calculating the arithmetic mean.

Part (b) was fairly well answered.

### **Question 15**

Part (a) was well answered.

Part (b) was fairly well answered but many students seemed to struggle with the concept of deciles. A large number of students did not make any attempt at answering.

In part (c) the majority of students were awarded at least one mark. Many students failed to state which school the teacher would say had performed better. A large number of students did not make any attempt at answering.

### **Question 16**

Part (a) was not well answered. A large number of students did not make any attempt at answering.

Part (b) (i) was fairly well answered with the majority of students awarded at least one mark for a value of 0.99 being seen. A significant number of students did not attempt this part of the question.

Part (b) (ii) proved challenging to many students. A common error was to state that 0.049 was the probability of getting 5 diamonds.

Part (c) was very well answered with the majority of students awarded both marks. A common method seen was to calculate the expected number of emeralds according to the designer's stated probability. This usually led to both marks being awarded.

### **Question 17**

This question proved very challenging to the majority of students. A common error was to try to use the values given in the formula for the standardised score. A large number of students failed to attempt this question.

### **Question 18**

Part (a) (i) was well answered.

Part (a) (ii) was not well answered. A common error was to discuss the validity of the source.

Part (b) (i) The majority of students were awarded at least one mark but few were awarded all three marks. The most frequent error was obtaining positive values for the seasonal variation. This resulted in a maximum of two marks.

Part (b) (ii) was not well answered. Many students read off an incorrect value from their graph. Again, a large number of students failed to make any attempt at answering this question.

Part (b) (iii) was reasonably well answered.

Part (c) (i) was fairly well answered with the majority of students being awarded at least one mark. Common errors were adding the wrong 4 values or simply not rounding their answer to the nearest hundred.

Part (c) (ii) saw the majority of students awarded the mark available.

Part (d) was not well answered with the majority of students failing to be awarded any marks. A large number of students failed to attempt this question. Common errors seen including plotting points at the end of the groups, not plotting the calculated value from part (c) (i) or an issue with the drawing of the trend line.

Part (e) (i) saw the majority of students awarded the mark. The most common error was focussing on a specific quarter rather than the trend.

Part (e) (ii) was not well answered with a significant number of students failing to make any attempt. The most common error was focussing on a single specific quarter rather than the trend.

### **Mark Ranges and Award of Grades**

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.