Principal Examiner Feedback

Summer 2013

Edexcel Level 2 Award (AST20)

Statistical Methods

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Edexcel Award in Statisitcal Methods (AST20)
Principal Examiner Feedback – Level 2

Introduction

There was no evidence to suggest that candidates had difficulty completing the paper in the given time. Candidates were able to complete their answers in the spaces provided and many showed intermediate steps in their calculations. Some candidates did not use a ruler to draw line segments in question 5 (c).

Reports on Individual Questions

Question 1

Many candidates obtained at least one mark for this question. The vast majority of candidates were able to identify part (a) as an example of discrete data but a range of answers was seen in part (b).

Question 2

The vast majority of candidates were able to score full marks for this question. Candidates were able to read off the values correctly. A common error was to plot a bar at an incorrect height. It was disappointing to see that some candidates lost a mark because they never interpreted the key, so never shaded the bars.

Question 3

Part (a) was answered well with the vast majority of candidates being able to identify the correct type of correlation. In part (b) the vast majority were able to plot the mean and draw a sensible line of best fit. A common error was to misinterpret the scale on the x axis and plot the mean point incorrectly. Some candidates failed to use a ruler when drawing a line of best fit. Part (c) was answered well and the majority of candidates were able to follow through from their line of best fit. A common error was to misinterpret the scale on the x axis.

Question 4

The vast majority of candidates were able to score full marks for this question. Parts (a) and (b) were answered particularly well. Part (c) was generally well answered, however, some candidates attempted to add the probability that the pencil was red or green or yellow and then not subtract from 1.

Question 5

Many candidates found this question difficult. Part (a) was done well but the common error was to state the median lied in the group $10 < t \leq 20$. Part (b) candidates found difficult as they did not know how to find the mean from a grouped frequency table. Those who knew they needed to find frequency × mid-point often divided by 4 to get an incorrect answer. Part (c) had two types of answers which were either completely correct or incorrect as they plotting frequencies at end points rather than mid-points. Some candidates that plotted points at correct midpoints then failed to join the points with straight lines.

Question 6

Many candidates were able to score 2 marks in part (a) and the usual error was to omit the key. Part (b) and (c) was answered well and the candidates who lost marks in part (c) gained 1 mark by identifying 25 and 12. The candidates that found an incorrect median often lost both marks in part (c).

Question 7

Many candidates were able to score full marks on this question. The vast majority of candidates stated an answer without showing any working, which meant that unless they had the correct answer they scored 0 marks. Some candidates were able to score 1 mark as they showed that the answer should be p × 140.

Question 8

The vast majority of candidates were able to gain this mark as they correctly identified 10.5 as an outlier with a correct reason.

Question 9

The majority of candidates were able to score 2 marks and most candidates scored at least 1 mark. Candidates must be more specific as to their reasoning and many candidates lost marks as they gave two reasons which referred to the same answer e.g. they gave two reasons which referred to an error in the vertical axis and so only scored 1 mark.

Question 10

Part (a) most candidates were able to score at least 1 mark and many were able to score full marks. Some candidates found part (b) and (c) difficult. A common error was to add the probabilities instead of multiplying. It was disappointing to see that these candidates did not recognise that this was an incorrect method as it gave them a probability greater than 1.

Question 11

Many candidates found this question difficult and very few scored full marks. The common error was to find difference between the two years and give an answer of 42.

Question 12

Part (a) most candidates scored at least 1 mark. The common error was that candidates did not interpret the scale correctly and therefore plotted the points incorrectly. Most candidates were able to score at least 1 mark in part (b) but very few scored full marks. Most candidates were able to give a correct comparison of a point but the vast majority were not able to compare the skew of the distributions.

Question 13

The vast majority of candidates were able to calculate at least one 4-point moving average correctly and many were able to calculate both correctly. Part (b) was not answered well and many left this part blank. A common error was to plot the moving averages starting at Q1 of 2011, but, scored 1 mark as they were able to plot the points consistently. Part (c) was done well by the majority of candidates but some candidates described a correlation and therefore lost the mark.

Question 14

The vast majority of candidates scored full marks on this question. In part (b) some candidates did not express their answer as a probability and just quoted how many possibilities were less than or equal to 3.

Question 15

Part (a) of the question was well answered; many candidates knew the advantage of taking a sample. In part (b) most candidates were able to score 1 mark and the common error was to give either overlapping boxes or non-exhaustive intervals. Most candidates were able to score at least 1 mark in part (c) by making reference to either one gender used or all being a similar age.

Question 16

Many candidates found this question difficult as they did not know how to find the combined mean. A common error was to add the 12.5 to 14 and either divide by 2 or divide by 5. Some candidates left this question blank.

Question 17

The vast majority of candidates were able to score 1 mark in part (a). The common error was to state the class interval that contained the median. Part (b) was answered well by the vast majority of candidates and very few arithmetic errors were seen. Most candidates were able to score 1 mark in part (c) and the common error was to plot the cumulative frequency at the mid-points for each group rather than the end points for each group. Some candidates lost marks as they decided to plot a line of best fit through their value. Many candidates were able to score full marks in part (d). Even candidates that had lost marks in part (c) were able to follow through to give an answer for their cumulative frequency graph.

Question 18

Many candidates found this question difficult. Some candidates scored 1 mark but lost the 2nd mark as they left their final answer as 14.6.

Question 19

This question was answered well by most candidates. Some candidates gave interesting answers like change the dice and made no reference to the outcomes already scored.

Question 20

The vast majority of candidates found this question difficult and scored no marks. It was obvious that candidates did not know how to calculate the standard deviation from a set of data.

Summary

Based on their performance on this paper, candidates should:

- Read the question fully and carefully before attempting to answer them

- Show working out to support the final answer

- Be encouraged to use a ruler when drawing straight lines

- To check the scale given in questions

- Know how to calculate the stand deviation

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