



General Certificate of Education (A-level)
January 2013

Statistics

SS02

(Specification 6380)

Statistics 2

Report on the Examination

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General

The level of computational skills remains good, but frequently this is not matched by the quality of explanations. Interpretations or explanations should always be made in the context of the question. Students should make sure that their answers address the points requested by the question. Responses do not have to be in sentences or paragraphs – bullet point answers are acceptable and often make salient points made by students easier to see. On all topics, students should be careful in explanations to avoid unclear pronouns, as in ‘it was accepted when it should have been rejected’.

Question 1

The majority of students scored well on this question. Most seemed to appreciate what a seasonal effect is, although a sizeable minority ignored the instruction to use the graph in finding this. Part (c) was well-answered, with many references to global warming.

Question 2

This was another question where most students scored well, correctly handling the distinction between the two tests. A common error in part (a) was to round 1006.2875 to 1006.3, not realising that after subtraction of 1005 this effectively reduced the calculation to two significant figure accuracy. In part (c), it was a common misconception that the Central Limit Theorem implies that any large sample (rather than a sample mean from a large sample) will be normally distributed.

Question 3

While many students scored full marks on this question, a surprising number had difficulty finding the correct values of λ to use, even in part (a) where the given value of λ was required. (The use of highlighters by students for identifying relevant numerical information in the stem of the question can be very helpful.) The reasoning in part (c)(ii) was generally good.

Question 4

Although a higher proportion of students were aware of the effects of rounding data than in some years, many seemed oblivious of this. In part (b) many students ignored the instruction to give the answer to the nearest thousand. In part (c), while many easily identified the two major differences with regard to types of sentence, others wrote about similarities or the total number sentenced. In part (d), while many could handle the easier part (i), a pleasing proportion correctly answered the more complicated part (ii). Part (e)(i) was very poorly answered, with the commonest answer being 205.8, the total of the given figures. In (e)(ii) only a small number appreciated that neither table contained any data about crime as such, merely sentencing.

Question 5

The calculations in part (a) were generally handled well. Part (b) was surprisingly poorly answered, with probabilities often multiplied instead of added. Frequently the median was given as 2.5, based purely on the x -values. In (c)(ii) many seemed to be reading $B(5, 0.7)$ as if it were a normal annotation, quoting a mean of 5 and a variance of 0.7, although many students made the correct deductions.

Question 6

In this question particularly, generalised summaries of the various sampling methods were stated without adaptation to the context of the question. Students should avoid contradicting the stem, for instance by asserting that pensioners do not eat in fast-food outlets. When a question asks for three reasons, students would be well advised to make simple bullet points, ensuring that they do actually give three. It appeared that few had any experience of organising cluster sampling, and many instead described how to obtain a random sample.

Mark Ranges and Award of Grades

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