MATHEMATICS

General Certificate of Education (New)

Summer 2018

Advanced Subsidiary/Advanced

FURTHER STATISTICS A - AS UNIT 2

General Comments

The new specification continues to give a wide spread in attainment over the course of the paper. Candidates were generally very good at performing calculations using formulae in the formula booklet; for example, calculating Spearman's rank correlation coefficient and the equation of a regression line. Many candidates struggled to form correct hypotheses for the three questions which required them. As expected, the questions which required interpretation in context were the least well answered.

Comments on individual questions

1. Although this question had a familiar feel to it, many candidates did not progress beyond part (*a*) and stating Var(X) and Var(Y). However, many others did perform well on this question, scoring full marks.

2. Parts (*a*) and (*b*) were generally well done with a handful of candidates multiplying by 3 instead of cubing their answer from part (a). Many candidates failed to score the final E1 in part (c) for not interpreting their calculations from the earlier part of the question. Although a considerable number of candidates were able to find the pdf in part (*d*), seldom did anyone write the limits and state explicitly that the pdf must be equal to 0 outside these limits; this was one of the most common omissions on the paper. Only a few candidates had the insight to successfully answer part (*f*).

3. This was by far the most poorly answered question on the paper. This is surprising because probability distributions have been assessed under the legacy specification and so should have been more familiar to candidates than some of the newer topics. Many candidates were unable to produce a probability distribution and, as a result, found it very difficult to answer part (*b*). Another prevalent error was using 0, 50 and 450 as the values of x, instead of -50, 50 and 450.

4. Along with question 7, this was very well answered overall. The most challenging part was commenting on the statement given in part (*c*), with more students thinking that it was a correct statement than otherwise. This showed a misunderstanding of what Spearman's rank correlation coefficient measures.

5. Candidates found forming the hypotheses and interpreting the parameters 6 and 0.6 the most challenging part of this question. Another common error was failing to combine groups where the expected frequencies were less than 5. Some candidates did manage to combine some of the groups together, but not all the ones that needed to be combined; solutions of this kind were treated in the same manner as those that did not combine groups at all.

6. Once again, forming the hypotheses proved challenging for many candidates, with the word “correlation” prevalent amongst incorrect answers. In part (*e*), very few candidates realised they had to comment on the *p*-value from the computer output, instead relying on the information in the table and making an intuitive comment.

7. This was by far the best answered question on the paper, with a vast majority of candidates getting full marks in part (*a*). In part (*b*), most candidates were only able to give one reason.