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General Certificate of Education (A-level)
June 2012

Statistics SS05

(Specification 6380)

Statistics 5

Report on the Examination

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General

Most candidates were well prepared for the standard statistical calculations. Nearly all had a go at interpretation although relating the results of their calculations to the context often proved challenging.
Only a small minority lost marks by premature approximation or giving their answers to too few significant figures.

Question1

Parts (a) and (b) were well answered apart from a few candidates who confused standard deviation and variance.
In part (c) most realised they were supposed to check whether or not their confidence interval contained 60. However there was much confusion both about the meaning of a confidence interval and about the meaning of standard deviation. Some believed they had shown that 90% of functional arm reaches lay between 21.4 and 48.3

Question 2

Most were able to deal with the calculations. In part (b)(ii) few commented that Alan's waiting time was less variable than Megara's. However it was possible to obtain full marks without this.

Question 3

Part (a) was well answered with the most common error being to use the wrong tail of the distribution. Not all understood the relationship between the Poisson and the negative exponential distribution but those who did generally succeed with parts (b) and (c).

Question 4

There was a high standard of work in parts (a)(i) and (ii) with many candidates producing completely correct calculations. It is acceptable to use p-values. However candidates who do so must convince the examiners that they understand the comparisons they are making and are not just copying down figures that appear on their calculators.
Part (b) provided a greater challenge. In part (b)(i) some made it difficult for examiners by using suffices such as A and B without making it clear what they stood for.
In part (b)(ii) only a small minority stated the values as requested.
When explaining, in part (c), why their conclusions should be treated with caution, many concentrated on defining Type 1 and Type 2 errors, rather than commenting on the non-random sampling and the likelihood of the approach of Christmas affecting the takings.

Question 5

In fitting the normal distribution many did not realise that, although the observed values all lay between 233.5 and 254.5, the expected values needed to include the complete tail. More disappointingly many used 234, 236… as class boundaries rather than 233.5, 236.5….
Most correctly carried out some grouping in part (a)(ii) but this often contributed to the large number who used incorrect degrees of freedom.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results statistics page of the AQA Website. UMS conversion calculator www.aqa.org.uk/umsconversion