AQA

General Certificate of Secondary Education
March 2011

Mathematics **43601H**

(Specification 4360)

Unit 1: Statistics and Number (Higher)

Report on the Examination

General

Many candidates have been well prepared for this examination. There was little evidence of a shortage of time. Candidates would benefit from more careful checking so that responses which could never be correct are detected and arithmetical errors are reduced in frequency.

Topics that were well done included:
- drawing a stem-and-leaf diagram
- identifying modal results
- ratio and its links to probability
- multistep money question
- advantages of interviewing against postal questionnaires.

Topics which candidates found difficult included:
- reverse percentage
- probability problem solving
- comparing two distributions
- estimating the mean of part of a distribution.

Question 1

This question asked candidates to decide whether money is discrete or continuous and to give an explanation why. After considerable reflection, we agreed that either answer with a suitable explanation would be acceptable but that the level of understanding required to offer a full and clear explanation was outside the scope of the examination, given that money can be interpreted as either discrete or continuous. We have therefore decided that the fairest course of action is to credit all candidates with the mark for this question in order to preserve the mark total for the unit.

An understanding of the difference between discrete and continuous data remains part of the specification at both tiers and may be tested in future papers. We will endeavour to ensure that this is done using clear and unambiguous examples.

Question 2

Although there were many correct answers in part (a), it was common to see incorrect methods for the mean of a discrete frequency distribution. Often answers that could never be correct were offered, such as £84.80. The quality of written communication mark for correct money notation was often lost, by writing the answer straight from the calculator as £10.6. In part (b), too many candidates simply quoted that the measures were 10 without support. This was particularly common for the modal fee. Most candidates were able to come up with a similarity and a difference in part (c), although candidates were not always precise with their words: stating for example, 'Shelley has different frequencies' is not true, whereas 'Shelley has a different total frequency' is true.

Question 3

Part (a) saw as many incorrect methods as correct ones and many candidates missed or ignored the rounding request. The stem-and-leaf diagram was very well done with many well-presented and accurate diagrams with appropriate keys. In part (c) few candidates could explain why it was only the mode for the 19 late trains that changed and many simply repeated the words of the question.

Question 4

This question was well answered with the concepts and methods of ratio understood.

Question 5

Many fully correct answers were seen but some candidates missed information in the question and only offered a part solution. 28% of 200 was often given as 14.

Question 6

There were some excellent tabular solutions and a few solutions correctly multiplying $\frac{1}{5}$ and $\frac{4}{5}$ and doubling. However, many answers were not set out well and it was often not clear what candidates were trying to do.

Question 7

Part (a) was well done with some good use of double inequalities or groups such as 0 – 20, 21 – 40, etc. Part (b) was also well done with many different correct answers seen. Candidates found part (c)(i) difficult but quite a few followed through correctly in part (c)(ii).

Question 8

Many candidates needed to be clearer in explaining decisions. Comments such as "it does not start at zero" did not say enough about the cumulative frequency graph in part (a)(ii). Most candidates attempted part (c) and used suitable measures. However, their comments were often not in context which meant that the quality of written communication mark could not be awarded. Many gave a long list of values without any explanation.

Question 9

In part (a) many drew a frequency diagram without using frequency density but there were also some well-drawn histograms as well as some correct cumulative frequency diagrams. Those who were able to do frequency density were also successful in scaling the vertical axis. Few correct answers were seen in part (b). The few that were seen were estimates of the mean for the two groups combined. Candidates found part (c) challenging.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results statistics page of the AQA Website.