AQA

**General Certificate of Secondary Education
June 2012**

Mathematics   **43601H**

(Specification 4360)

Unit 1: Statistics and Number (Higher)

Report on the Examination

Unit 1: Higher Tier

General

Students found all questions accessible and there were far fewer non attempts at questions than in previous series. There were many basic arithmetic errors. Students are expected to use a calculator throughout the paper but clearly many do not. The presentation of work was better than in recent exams but on more involved questions many who could access the information did not use a logical, organised approach.

Topics that were well done included:

- calculating a total from a discrete frequency table
- recognising strong correlation
- calculating a percentage
- understanding mutually exclusive probabilities.

Topics which students found difficult included:

- giving a suitable response section for a question
- comparing two distributions from means and frequency polygons
- describing how to form a random sample
- working with the bounds of a rounded number.

Question 1

This question was well answered and proved to be an excellent start for most students. A few gave 0×13 as 13 in part (b).

Question 2

Most students realised that addition was necessary although there were errors in the addition of the two decimals.

Question 3

There was a mixed response to this familiar type of question. Rounding to three significant figures was not well done.

Question 4

Most recognised A for part (a) and B for part (b). Some inappropriate explanations were offered in part (b) including "the line does not pass through any points" or "there could be more than one line of best fit". The best answers referenced "no correlation".

Question 5

In addition to formal methods seen, a number of students successfully built up the difference between the two shares from 3 to 210 but were not then able to identify the number of red bricks. It was common to see $210 \div 7$ as an incorrect start to this question.

Question 6

Many students did not know what a data collection method is and many wrote "tally chart" in part (a).

The main error in part (b) was a failure to include a "don't know" or other suitable third option to "Yes" or "No".

Part (c) was well answered but many students did not use a calculator. Some tried to build up using 20%, 5%, 2.5%, or even 10%, 1% etc.

Question 7

This question was a good discriminator as nearly all could access and make progress on the question. Listing outcomes was far more popular than using probability theory. Some worked out exactly 12 instead of 12 or more and some made arithmetical slips but overall this was well answered.

Question 8

Those who know how to estimate the mean from a frequency distribution for continuous data were often successful in part (a). Some students used lower class or upper class bounds instead of midpoints.

Part (b) was well done.

Many students successfully gave a comparison of an average in part (c) but very few gave a comparison of the spread. The most common error was that students continued to make anecdotal comparisons between frequencies for a particular class interval.

Question 9

This question was another good discriminator as virtually all were able to understand the context and access the problem. However, setting out the solution in a logical, organised way was rare and some answers were cluttered with number calculations with little or no explanation of what was being done.

Question 10

Most students had some success with part (a).

In part (b) many knew about random sampling but few knew a method to find one. Others chose and explained systematic sampling.

Question 11

Nearly all students found this question challenging as the bounds are not spread equally about the given number. A significant proportion of students identified one correct bound but few identified both.

Question 12

This was generally well answered. Some students omitted to include the £6 and others used the range instead of the interquartile range.

Question 13

Having an answer to work towards in part (a) led to some dubious working to obtain the result, mainly due to misreading the scale as 82 for the third bar height. Others worked from the given answer.

Although part (b) was generally found to be a challenging question, some good solutions were seen.

Mark Range and Award of Grades

Grade boundaries are available on the Results statistics page of the AQA Website.

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