AQA

GCSE

Mathematics

8300/1H Paper 1 Higher

Report on the Examination

Specification 8300

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General

The first half of the paper proved accessible to most students, but there was an increasingly large number of non-attempts towards the end of the paper. This is probably due to the nature of the candidature (resitters), rather than any time pressures.

Topics that were done well included:

- working with square roots
- dividing in ratio
- the product rule for counting
- interpreting a capacity/time graph.

Topics which candidates found difficult included:

- bounds
- writing algebraic expressions
- proof
- cumulative frequency
- ratio and proportion problems
- working with indices.

Question 1
This question was not particularly well answered. Many students did not correctly evaluate 2^6.

Question 2
This question was well answered.

Question 3
This question was well answered.

Question 4
This question was well answered.

Question 5
Neither part of this question was particularly well answered. $(x - 10)^2$ was a common incorrect answer to part (a), while rearrangement and sign errors were often seen in part (b).

Question 6
This question was well answered, although many students evaluated $\sqrt{3}$ as 1.5 and $\sqrt{2}$ as 1

Question 7
Most students correctly obtained 36π, but many then did not divide by 4 or carried out a different further calculation.

Question 8
This question was not well answered. Most students looked for numbers which rounded up rather than down, with 67 from numbers such as 39, 19 and 9 being a common answer.

Question 9
This question was not well answered, with the incorrect options being generally more popular than the correct one.

Question 10
Part (a) was not well answered, with few students giving a correct initial expression, and only a small proportion of those going on to correctly simplify it. In part (b), there was even less success in achieving a starting expression, this time in terms of b and s, but of those who did a greater proportion went on to obtain a correct expression in terms of b.

Question 11
This question discriminated well, with a good range of marks. Many students who chose a correct method then made due to arithmetic errors, particularly when calculating 260 ÷ 5.

Question 12
There was a reasonable response to this question. Rounding 0.526 to 1 and incorrectly evaluating 40^2 were the most common errors.

Question 13
This question was well answered. Students who based their method on dividing 88 by (7 + 4) usually arrived at the correct answer, and those who used trial and improvement with numbers in the ratio 7 : 4 also had some success.

Question 14
Students who worked with an exterior angle of 30° were usually successful, but those who worked with the interior angle rarely made progressed beyond the first step.

Question 15
Part (a) was well answered, and there was reasonable success in part (b). Many students, however, added 7, 5 and 3 in part (a) and added $\frac{2}{7}$ to $\frac{3}{5}$ in part (b).

Question 16
This question was very well answered.

Question 17

This question was not well answered, with many students stating that Alex was correct. Those who ticked the correct box rarely gave a correct reason.

Question 18
There was a reasonable response to this question, although a sizeable proportion of the students only circled one value.

Question 19
Despite only needing simple angles theorems this proof question was very badly answered, although some students showed that the four central angles summed to 360°.

Question 20
Many students argued correctly that the mode was not suitable, as none of the numbers were duplicated, but most said that the mean was the appropriate average to use. Some students

simply defined the two terms they had not selected, for example 'median is the middle' and 'mode is the most', which did not answer the question.

Question 21
While a reasonable number of students worked out that 56 was important, few gave coordinates that resulted in that value.

Question 22
In part (a), a reasonable proportion of the students worked out the cumulative frequencies correctly, but many then plotted them at the mid-points and started their curve at (0, 0). Part (c) was not well answered, with a high number of non-attempts.

Question 23
This question was reasonably well answered, although (3, 5) was the favourite option.

Question 24
This question using circle theorems in a problem solving context was not well answered, with many students writing an expression in all four variables or starting with $x + x + 20 = 180$. Again, there was a large number of non-attempts.

Question 25
Although there were few non-attempts, this question was not well answered. Many students started by trying to divide 15 by 8 or 8 by 15, and this and other methods often led to working in minutes rather than hours, which was almost always unsuccessful.

Question 26
There were some reasonable answers to part (a), but many incorrect answers were unnecessarily complex. Those who were successful in part (b) usually used an algebraic approach from first principles rather than using the information in part (a).

Question 27
Students who were successful had usually drawn a tree diagram, but many of those who did draw a tree diagram failed to take into account the conditionality of the context.

Question 28
The first two parts of this question were well answered, but few students were successful in part (c) and even fewer in part (d), with very large numbers of non-attempts in both these last two parts.

Question 29
Part (a) was reasonably well answered, but there were very few correct answers to part (b).

Question 30
Students had some success in part (a), but very few made any progress in part (b). 16 × 8 was a common starting point.

Use of statistics

Statistics used in this report may be taken from incomplete processing data. However, this data still gives a true account on how students have performed for each question.

Mark Ranges and Award of Grades

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