GCSE
MATHEMATICS

8300/1F: Paper 1 (Non-Calculator) Foundation
Report on the Examination

8300
June 2019

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General

This examination appeared to be accessible with many good responses noted throughout the paper. Time did not appear to be an issue with all students appearing to have the necessary time to complete the paper. The quality of arithmetic remains a problem but there were signs that it is improving, compared to previous years. The amount of working shown also appears to be slightly better, with far fewer occasions where an answer only was seen where working was expected.

Topics which were done well included:

- multiplying a decimal
- coordinate problem solving
- money problem solving
- factors
- long division in context
- long multiplication in context
- calculating a percentage of an amount
- volume of a cuboid.

Topics which students found difficult included:

- combining triangles to make a rhombus
- describing an error in a bearing method
- simplifying a ratio to n : 1
- using expressions to achieve a given total
- dividing in standard form
- using a tree diagram to compare probabilities
- simplifying powers of 3
- comparing areas of circles and semi-circles
- plotting and using a curve.

Question 1

This question was quite well answered. The most common wrong answer was obtuse.

Question 2

This question was well answered.

Question 3

This question was quite well answered.

Question 4

This question was well answered.

Question 5

In part (a), most students completed the sums in the correct order and many did the initial addition correctly. When it came to the subtraction, a number of students did not put the zero as the second decimal place, which nearly always meant that the subtraction went wrong.

In part (b), the multiplication was done well.

Question 6

Most students were able to find the final vertex on the shape with the mathematical language appearing to be well known.

Question 7

This question was generally well done with students carefully working through to the right answer.

Question 8

In part (a), there was much confusion about how to get the mode from the diagram. Parts (b) and (c) were done much better, with a good understanding of using the diagram for probabilities. Incorrect use of ratios, though still seen occasionally, is far less common than it was.

Question 9

Both parts were quite well done, though in (a) some were writing their answers as factor products, which is not the list of factors required.

Question 10

Part (a) was done very well, with most students not only carrying out the division correctly but also realising that the remainder meant that an additional coach was required. Part (b) was also done well with a great deal of accurate work seen. Some students made errors when multiplying by the zero.

Question 11

Throughout these parts, students often used different sized triangles to the one given, which was accepted as long as they weren't isosceles and therefore made the question easier. Each part, as anticipated, was successively more challenging but some students did manage to get all three parts correct.

Question 12

This was well done with varied but usually successful build up methods given. It is worth mentioning again on these questions that stating what 10% is does not constitute working, however – showing that this requires division by 10 is working. If the answer is subsequently correct this is not a problem but when the answer goes wrong, stating '10% =' and getting it wrong means that there can be no method marks awarded either.

Question 13

This question was not very well answered.

Question 14

This question was well answered with many understanding the required calculation.

Question 15

It would seem that the phrase 'uniform cross section' was not well known, as this question was very poorly answered.

Question 16

Part (a) was quite well done with many focusing on the place from which the work was being done as the problem. Many of the wrong answers saw students simply checking the angle on the diagram.

Part (b) was even better though with many understanding the relationship between the direction given and the bearing.

Question 17

Parts (a) and (c) were both well done, probably being most familiar amongst these parts. Part (b) was not very successful and most students couldn't deal with the question.

Question 18

Many students scored well on this question, as they managed to make relevant statements in the context of the question. Those who tried to calculate differences, however, often spoiled a good explanation by getting the difference wrong.

Question 19

This question was not done very well. In parts (a) and (b), students either saw what was going on or didn't. In part (c), as well as the anticipated algebraic approach which was rare, some students found values which worked for the variables in the original equations and used this to obtain an appropriate expression.

Question 20

Part (a) was done reasonably well. Part (b) was not done well and those who were successful usually turned the numbers into ordinary numbers straight away rather than trying to manipulate the standard form first.

Question 21

In part (a), the tree diagram was not done very well but in part (b) there were actually very few correct solutions at all. This is a familiar topic but it was done very badly.

Question 22

Students found this problem quite hard to solve, many getting 15 but forgetting to add the 3 on to it.

Question 23

This was not well done, although many scored part marks by dealing with one of the brackets or perhaps getting a 27 for the second bracket. It is not good practice to try to evaluate all the numbers in a question like this.

Question 24

Both parts were reasonably well done.

Question 25

Those who knew the area of a circle formula gained marks here. Many forgot to subtract the shaded from the area of the large circle when trying to find how many times bigger the unshaded area was, but these students could still score three marks. Leaving π in solutions is becoming more familiar for Foundation students, though ironically it cancelled out in this particular problem.

Question 26

In part (a), most were able to plot the required points but many did not join them up, and some of those who did used straight line segments instead of a smooth curve.

In (b), of those students who realised what to do, some incorrectly used 3.3 on the scale to stand for 3 minutes and 30 seconds.

Question 27

This was not well done with the most common error to divide through by 2 first and not dividing the 6 as part of this process.

Question 28

Quite a good proportion of students attempted this and obtained at least 3 correct terms. It was fairly common to have all the x terms correct and the constant at the end incorrect, or to get all four terms correct but then be unable to correctly simplify to the final answer.

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.