GCSE
MATHEMATICS

8300/1F Paper 1 Foundation
Report on the Examination

8300
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This was an accessible paper which students were able to attempt in full. With this being just available for those re-sitting the exam there were fewer really high scores. However, there were plenty of opportunities for students of all abilities to achieve success. There was no evidence that any students were short of time.

Arithmetical errors, often with very simple values, and unclear written communication continue to be themes which cost students marks.

Topics which students were successful in included:

- solving simple equations
- interpreting a composite bar chart
- working with decimals
- finding errors in work
- simple probability
- estimating values of decimal calculations
- knowing the value of five cubed

Topics which students found more difficult included:

- multiplying decimal values
- working out a proportion
- ratio with a triangle angle question
- criticising statements about transformations
- writing a product as a single power of 3
- comparing volumes of a cylinder and a hemisphere
- working with ratio in context
- standard form

Question 1

This question was not very well answered, with many choosing $\frac{9}{100}$, presumably as they ignored the decimal point in the number.

Question 2

This question was very well answered.

Question 3

This was reasonably well answered but a fair proportion chose the wrong inequality sign, <

Question 4

This was not very well answered with a variety of the other answers appearing regularly.

Question 5

This was generally very well answered. Most of the errors were made when multiplying by the 20 or the 70. Very few students scored zero on this.

Question 6

All of parts (a), (b) and (c) were very well answered.
In part (d) most were able to split the 18 in half successfully and draw the bar. The most common error was to miss the label off, followed by not completing the shading successfully.

Question 7

Part (a) was quite well done, although some students became confused with the place value of their answer.
Part (b) was poorly done with many students thinking the answer was 0.8

Question 8

Part (a) was really well done.
Part (b) was often incorrect because students were adding up values instead of subtracting them. Some of those who subtracted the correct numbers made errors.

Question 9

This was usually well done with the vast majority spotting the error in the calculation for the pens; unfortunately some of these also felt there was an error in the calculations for the rulers which was not the case. Once the error was corrected, the new total was usually correct.

Question 10

This was quite well done with the majority scoring two or three marks. There were quite a few errors with the number of zeros in the calculations. Most seemed to know that 1 million has six zeros.

Question 11

In part (a) most were correctly using a value such as 0, but a fair few were using words such as impossible which is not a probability.
Most could manage part (b) although this was sometimes beset with arithmetic errors when subtracting 79 and 90 from 200.

Question 12

Many students seemed to struggle with this question, and seemed to think there were 19 female teachers not 19 more female teachers than males. Very few seemed to use formal methods and relied mainly on trial and error attempts.

Question 13

This question was well answered with just a small proportion unable to complete the division of 260 by 20. Far fewer than in the past tried to calculate the exact answer probably due to the clarity of the instructions.

Question 14

This question was a good discriminator between students of different abilities. Some students gave very good solutions whilst others could get some credit even if they were working out the wrong perimeter.
The cancelling down was generally done well though, as usual, some ignored the request.

Question 15

This was poorly answered with a large majority dividing 180 by 5 and rather than 6.

Question 16

This question was very well answered.

Question 17

This topic was possibly better answered than often in the past. It was still a minority who scored full marks but many seemed to have a good idea of how to get the points required to draw the line. The most common error, unsurprisingly, was with the coordinate at $x = -1$ where -2 was often incorrectly calculated as the y-coordinate. Most lines were drawn with a ruler.

Question 18

Part (a) was generally done well but for some reason some were working out the fraction of games he lost.
In part (b) it was really common for students to try to find 64% of 20 instead of 64% of 50. Neither was done well.

Question 19

In part (a) students were often really unclear about what they were trying to say. The best answers referenced that there could be (for example) 20 sheep (and 6 cows).

Part (b) was answered much better with the realisation from many that there would be 12 goats if that ratio was true so Priya was correct.

Question 20

This part was quite well answered.

Question 21

This question differentiated well between students of different abilities, although about half were unable to progress successfully to the first mark. What was notable was the number who progressed from $6x = 3$ to an incorrect answer of $x = 2$

Question 22

This question was very poorly answered with little appreciation that the largest angle had to be the right angle and therefore 1 part of the ratio was 18. Very few scored on this question.

Question 23

The meaning of discrete data was not very well known.

Question 24

Neither part of this question was done well with students unable to focus their attention either on the incorrect equation of the line of reflection in part (a), nor the lack of a centre of rotation in part (b). In both parts students were often trying to say that the transformation was a different one to either the reflection or rotation respectively.

Question 25

Part (a) was not done very well with many students not knowing what a geometric progression is. Part (b) was slightly better although the work was often spoiled with errors in adding negative numbers.

Question 26

This proved difficult for most students who didn't really seem to know how to proceed. In particular, few seemed to appreciate that $\frac{4b}{a}$ is $4 \times \frac{b}{a}$

Question 27

Very few could make substantial progress on this question. There were many who tried to evaluate the value of powers of 3 which is rarely going to be useful or successful when the answer is required as a power of 3. It was very common to see the incorrect value 3^9 and very few thought to write 27 as 3^3 even though many probably knew that.

Question 28

Many scored one mark by correctly substituting into the hemisphere formula but the correct evaluation in terms of pi was very rare. For the cylinder, students need to know the formula for the volume and many did not. The best responses to this question had work clearly labelled as to whether it was for the cylinder or the hemisphere, but many simply had random calculations across the two pages. On a positive note, students seem far more comfortable leaving their answers in terms of pi than on previous series; plus some realised that pi was a common factor and could be cancelled out.

Question 29

There was a fair amount of confusion about how to proceed with this question. Many students mixed up ratios and colours too early in their work instead of working on how much red and white was in the Rose Pink paint. Some produced good work but then didn't answer the question with a decision.

Question 30

In part (a) some chose to go for the full number approach which often saw errors in the numbers of zeros produced. Those who tried to divide 2 by 8 often thought it was 4.
Part (b) was slightly better done with quite a good proportion getting at least one of the powers correct.

Question 31

Despite the instructions many did not tick two boxes here and of those who did, only a small proportion chose the correct ones.

Mark Ranges and Award of Grades

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