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GCSE

# Mathematics

8300/1F      Paper 1 Foundation  
Report on the Examination

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Specification 8300  
November 2017

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## General

The second foundation assessment for the new specification proved to be an accessible paper with very few non-attempts. Work was generally well presented except when students were trying to criticise methods where the language used made it difficult to understand. There was no evidence of students being short of time.

Topics that were well answered included

- solving simple equations
- interpreting diagrams
- connecting ratio and fractions
- understanding that total probability is equal to 1
- percentage in a problem solving question
- using conversions.

Topics which students found difficult included

- adding fractions
- drawing a straight line given its equation
- understanding numbers whose product is 1
- finding errors in construction methods
- carrying out a construction
- problem solving in the context of rounding
- expressions for area and perimeter of shapes
- evaluation of square roots of squares
- using algebra in a pie chart context
- factorising the difference of two squares
- solving an inequality.

### Question 1

This question was well answered.

### Question 2

This question was the least well answered of the first four questions.

### Question 3

This question was quite well answered.

### Question 4

This question was well answered.

### Question 5

All parts of this question were very well answered.

### Question 6

Part (a) was not well answered with most correct solutions coming from a traditional short division. In part (b) few could add the fractions correctly.

**Question 7**

Part (a) was well answered. In part (b), many made some progress although work often finished at 28. Reading from the chart was generally well done with few errors.

**Question 8**

The majority of students understood how to answer this question. Unfortunately, solutions were beset with issues such as not knowing the number of days in September or not understanding that 8p was £0.08 and so 0.8p was often used.

**Question 9**

Part (a) was well answered. In part (b), students often did not organise their work clearly so that it was difficult to tell if their answer contained pairs of squares in the solution or simply a list.

**Question 10**

Most students had some success with this question, with the conversion of  $\frac{5}{2}$  causing most problems.

**Question 11**

Part (a) was well answered and although the method for part (b) was usually known, students made more arithmetical errors in the working out than in many other questions. A few students worked out the number of cards that were not yellow.

**Question 12**

Whilst part (a) was well answered, part (b) was not, with many incorrect answers occurring.

**Question 13**

This was a well answered question with most students knowing the total probability is 1 and there were few arithmetic errors.

**Question 14**

Although there were some good answers, often based around tables of values, many students did not understand how to draw the required line. There were many curves and incorrect points plotted and some students who had the correct points did not join them.

**Question 15**

Although predominantly well answered, this question discriminated well. Many students made some progress combining or finding multiples of the given percentages, but only the better students were concise and focussed with their working. Weaker students also made basic errors in arithmetic.

**Question 16**

Students found this question challenging and many were unsuccessful in making the product of a row, column or diagonal equal to 1. Very few showed evidence of multiplying the two given numbers first.

**Question 17**

In part (a), many students knew how to work with a term-to-term rule but a significant number did not give the third term as their answer. In part (b) most knew what the inverse operations were but few reversed the order.

**Question 18**

This was a good discriminator with most students making some progress towards the required result, often with a well-annotated diagram. Many did not present their work clearly.

**Question 19**

This was another question which discriminated well and most students made good progress.

**Question 20**

A secure understanding of square numbers was evident, although less so for prime numbers. It was very common for students to give 1 as a prime number.

**Question 21**

All parts of this question were poorly answered, but particularly parts (a) and (c). In part (a) students were often unable to specify what was wrong with the construction with many unable to articulate where the original arcs should have been drawn from. In part (c) there was very little evidence at all of constructions being attempted using a pair of compasses.

**Question 22**

This question was not well answered although there were some good attempts made using calculations. Those who tried to build up their multiples of 7 and multiples of 4 often did not line them up carefully and so the pair which added to 88 was missed.

**Question 23**

Few students were able to find both issues with the graph, with far more able to reference the erroneous curve than the increasing line for the return home.

**Question 24**

The use of correct methods for this question was quite rare although most students made an attempt at the question. Numbers ending in 9 were very common, as were arithmetic errors.

**Question 25**

This was not well answered, with all incorrect answers being chosen regularly.

**Question 26**

The two parts of this question were the worst answered in the paper. Most students were unable to work with the variables correctly in either part. There were many non-attempts, especially on part (b)

**Question 27**

The formula for the area of a circle was fairly well known, but many students did not find one quarter, either ignoring it or choosing an incorrect fraction. Many also tried to use a decimal value for  $\pi$  or dropped the  $\pi$  altogether in the answer.

**Question 28**

Neither part was well answered although more could convert to an ordinary number in part (b) than could convert to standard form in part (a) even though part (b) had a negative index.

**Question 29**

Many arithmetic errors were seen in this question, with root 3 often being 1.5 and root 2 often being 1. Very few students convincingly achieved the correct answer, and those that did, usually went via root 4 and root 9.

**Question 30**

Some students made progress by adding and simplifying the algebraic angles but many of these did not bring in 360 degrees as the total so made no further progress. Of the few who managed to find the value for  $x$  correctly, many forgot that angle  $C$  was not just  $x$ , but  $2x + 10$ .

**Question 31**

In part (a) few students factorised the expression. In part (b) there were some correct solutions but many were unable to make any progress with the inequality.

**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.