

OXFORD

INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL GCSE MATHEMATICS

(9260/1C) Paper 1C

Report on the examination

June 2022

REPORT ON EXAMINATION: INTERNATIONAL GCSE MATHEMATICS 9260/1C PAPER 1C JUNE 2022

Students were able to access the questions, and the mark scheme rewarded correct mathematics at all ability levels. However, some students did not set out their solutions clearly and numbers were often written unclearly. Some students misread their own handwriting. There was no evidence of time pressure, with the majority of students completing the paper.

Topics that were well done included:

- using a two-way table
- reading a bar chart
- coordinate problem
- proportion reasoning
- relative frequency
- simplifying indices.

Topics which students found difficult included:

- total from a frequency table
- rotation and enlargement
- equation of a straight line
- reliable estimate of probability
- cylinder problem
- roots of a quadratic.

QUESTION 01

This question was very well answered. The common wrong answer was 12° .

QUESTION 02

This question was very well answered. Both a fifth of 20 and an eighth of 36 were common wrong answers.

QUESTION 03

Students found this question more challenging. The common wrong answer was congruent.

QUESTION 04

Students performed poorly on this question. The common wrong answer was $x = 4 - y$.

QUESTION 05

Part (a) was very well answered. Common wrong answers were the number of triangles, the number of large shapes and the fraction of large triangles.

Part (b) was also well answered. Common wrong answers were the number of square shapes and the fraction of small squares.

QUESTION 06

In part (a) many students worked out one or more of the daily hours incorrectly. It was common to see 3 hours 30 minutes for Tuesday becoming 3.3 in subsequent calculations. Those who knew it was 3.5 hours sometimes worked out the half hour of pay incorrectly or just ignored it. However, there were lots of fully correct solutions.

Part (b) was slightly better answered, but the common error was to divide by the original rate of pay rather than the double rate. Some students were unsure how to interpret the decimal answer. Students who attempted to build up to the answer often made arithmetic errors.

QUESTION 07

This question was not very well answered. The most common error was to add up the first column and give an answer of 15. Some added up the frequencies to get 14. Those who were using the correct method occasionally made an arithmetic slip when multiplying by 0.

QUESTION 08

Part (a) was not so well done, and common incorrect answers were 6, where the student lost the minus sign, and -9.5 , where the student worked out $-7 - (5 \div 2)$

Part (b) was well answered, with the majority of students finding one of the pairs that work.

QUESTION 09

The majority of students did not know what a tangent was and usually drew a chord. Some drew a right-angled triangle and tried to show the tangent of the angle.

QUESTION 10

This question was well answered. All other options were chosen by students.

QUESTION 11

In part (a) very few students seemed to work out the answer by simply looking for the largest difference in heights. Most evaluated the difference for each day. Some gave the answer 'Monday', which had the most complaints. Some gave the answer 'Monday and Thursday', presumably because they had the biggest range in complaints about products. However, the question was very well answered.

In part (b) the majority of students were able to work out that Friday had 14 complaints, but this was often followed by an answer of '9 and 5' because they divided by 2 and then added 2, rather than adding first. Some made arithmetic slips but showed the correct method. Some students simply drew two bars with a difference of 2.

QUESTION 12

This question was very well answered. A few students reversed the coordinates or plotted the given coordinates but then gave the wrong coordinate for the fourth vertex.

QUESTION 13

The question was well answered, although some students misread the scale and used \$20.80 as the cost of Wheels. Some students thought that they needed to multiply 28 by 9.75. Occasionally, students thought the cost was \$24 from $3 \times$ the \$8 daily increase.

QUESTION 14

The majority of students subtracted the 12 yellow sweets first and then worked out a quarter of the remaining sweets. This gave an answer of 63 green sweets. Some students thought that there were 25 red sweets and made no progress. Those who knew to work out a quarter of 96 usually gave a fully correct solution.

QUESTION 15

Part (a) was very well answered. Those who used the calculation 216 divided by 28 got the decimal answer 7.7 and then sometimes said that meant there were not enough adults. However, most gave one of the required calculations and evaluated accurately.

In part (b) most students used a build-up approach to find the number of coaches that would take more than 244 people. Those who divided 244 by 55 often truncated the decimal answer instead of rounding up to ensure there were enough coaches. Some only took account of the 216 students and ignored the need for the adults to have space on the coaches. Weaker students reduced by 10% by subtracting \$0.10 from their cost. However, many students gave a fully correct solution to this multi-step problem.

QUESTION 16

Many students worked out $180 - 90 - 60$, but not all knew which angle this applied to. Often students thought that angle $B = \text{angle } D$, presumably thinking of alternate angles. Some assumed that triangle ABX was equilateral. Those who spotted the vertically opposite angles and then used the isosceles nature of triangle ABX usually gave a fully correct solution.

QUESTION 17

In part (a) many students managed to collect the first two terms to get $11c$, but most thought the final answer was $11c + 5c$ or $11c$.

In part (b) the most common wrong answer was 7, from $-9 + 16$. Students often multiplied 64 by a half before squaring it.

QUESTION 18

A large proportion of students did not attempt this question. Many students had lists of numbers containing four or ten numbers, rather than the specified five. Some ignored the need for positive whole numbers and used 0, 1, 10, 11, 12. The most common incorrect set of five numbers was 8, 9, 10, 11, 12. Some put 10 in the middle of an unordered list so that it was not the median value eg 1, 2, 10, 3, 4.

QUESTION 19

In part (a) some students gave the rotation. Most described the translation rather than using a translation vector. Those who attempted the vector often gave the values the wrong way round or used positive values. Some gave the answer as coordinates.

In part (b) many students wrote about translations or reflections. Those who referred to rotations often only mentioned the direction of turn but not the angle or centre. It was extremely rare for students to give a fully correct description and many students did not attempt this part.

In part (c) hardly any fully correct enlargements were seen, but many students drew a rectangle with the right dimensions but in the wrong position.

QUESTION 20

Part (a) was poorly answered. Almost double the number of students who gave the correct response, chose the response $y + 2 = 0$.

In part (b) common incorrect equations were $x + 8 = 0$, $x + 8 = 8$, $y + 8 = 0$, $y + 8 = 8$ and $y = 8$. Some students simply wrote down a pair of coordinates on the line. Very few gave the correct solution.

QUESTION 21

Some students only worked out the area of the full circle or used the formula for circumference. A few thought the diameter was 9 cm and made no valid progress. Some students worked out 20% of the area of the semicircle rather than the rectangle. A small number of students gave fully correct solutions, usually by comparing the shaded area with 20% of the area of the rectangle.

QUESTION 22

This question was poorly answered. More than double the number of students who gave the correct answer chose the answer 6, the number of sides of the base.

QUESTION 23

In part (a) many students gave 3 or $\frac{3}{7}$ or 30 as their answer.

In part (b) the vast majority of students said it was reliable and repeated their calculation for part (a). Some said it was not reliable because it should have been 5 reds. Some repeated the information that the spinner was biased. A small number of students successfully commented on the small number of trials.

Part (c) was well answered. The common wrong answer was 'More than 3'.

QUESTION 24

This was poorly answered, with most students not realising that they needed to find a common denominator. Students often tried to simplify the fractions given or attempted to cross-multiply. Many ignored the difference in the denominators. Those who knew the method required usually worked accurately, although some made a mistake expanding the brackets. Students with a fully correct solution often went on to try and simplify it further.

QUESTION 25

Many students used simple interest. Those who worked year by year often stopped at 4 years. Some tried to use a version of the compound interest formula but usually remembered it incorrectly or substituted incorrectly. Those who used the correct method often gave their answer to an inappropriate degree of accuracy for the context of the question. Some students reduced the amount by 2% each year.

QUESTION 26

This question was poorly answered, with most students dividing 15 by 2. Some used the formula for area and most did not appreciate the link between 15 and the circumference.

QUESTION 27

This question was well answered, especially as this was common with the Extension tier. However, many students were uncertain about the rules of indices. Some students thought the denominator simplified to $4w^6$. There was some partially-correct simplification seen.

QUESTION 28

This question split the entry, with a good proportion of students giving fully correct or almost fully correct responses but many unable to make any meaningful progress. The most common error was to work out 1400 and 2800 and give the answer 'a half'. A few students did not give their correct fraction in its simplest form. Some students did not start by dividing the total number of trees by 7 and made no progress. Occasionally students divided the total number of trees by 5.

QUESTION 29

A reasonable number of students were able to state the correct equation in $\sin x$, but some were then unable to solve it. Some divided 65 by 31 instead of using the correct ratio. Attempts to use Pythagoras' theorem to find the third side were seen, but students often then gave that value as their answer. Answers using both cosine and tangent were also seen.

QUESTION 30

Part (a) was well answered for this point of the paper. Some students started the process but did not manage to get two brackets in the correct form.

However, part (b) was poorly answered. Some students gave 2 and -8 as their answer and some gave one correct root. Many students simply expanded the brackets.

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