

GCSE (9–1)

Examiners' report

MATHEMATICS

J560

For first teaching in 2015

J560/01 Autumn 2021 series

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.



Reports for the November 2021 series will provide a broad commentary about candidate performance, with the aim for them to be useful future teaching tools. As an exception for this series they will not contain any questions from the question paper nor examples of candidate responses.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

A full copy of the question paper and the mark scheme can be downloaded from OCR.

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November 2021 J560/01 overview

This paper is the first paper taken for GCSE (9-1) Mathematics. It is a calculator paper.

Mathematical ability is the obvious difference between those who did well and those that did less well, but presentation of work and the application of even limited knowledge can raise the performance of weaker responses. Many candidates who attempted the later questions were often able to score 1 mark on some of these questions.

Questions 1 to 9 were attempted by the majority of candidates with correct answers often seen.

<i>Candidates who did well on this paper generally did the following:</i>	<i>Candidates who did less well on this paper generally did the following:</i>
<ul style="list-style-type: none"> showed working set working out in a clear logical way, using the working space efficiently read the questions carefully, paying attention to units and accuracy attempted most questions gave clear full explanations when required. 	<ul style="list-style-type: none"> did not show working had poor presentation did not consider if their answers were reasonable did not always use the most efficient method did not attempt all questions.

Comments on student responses

Question 1

In **(a)**, a small number of students lacked accuracy and rounded to 9. In **(b)(i)** some candidates were not able to correctly use a protractor to measure the angle.

Question 2

In **(b)**, many students gave 2 as a square number. In **(c)** some students gave a prime number that was not between 31 and 40.

Question 4


Some students confused the range and mean. A small number gave the median rather than the mean in **(b)**.

Question 5

In **(b)**, just 439 was often seen, i.e. missing off the final zeros.

Question 6

Here some candidates ordered the numbers by the number of decimal places, rather than the actual values.

	AfL	Encourage candidates to write the numbers in columns and add zeros.
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Question 8

In both parts here the most common error was to reverse the coordinates, e.g. giving (-4, 3) rather than (3, -4).

Question 11

Many candidates here did not realise the need to use pi. Of those that did, most scored 1 mark for finding the area of the full circle, however a significant number of these then did not pick up a second mark for halving it to get the area of the half circle.

Question 12

In **(c)** many candidates used a 'build up' method rather than calculating the exchange rate. Most of these did score some method marks, but not all arrived at the answer.


Question 13

Many realised the values in the table needed to add to 1 and several were able to get to 0.6. Many of these were however unable to calculate the values using the given ratio.

Question 16

Correct answers were seen from quite a few students. Many candidates who attempted this question were able to scores 1 or 2 marks for $1200 \div 4$ and/or 440. A common error was to then use 100 or 1000 as the denominator.

Question 17

	Misconception	Candidates did not appear to be familiar with the concept of proportion. Many subtracted the sides, leading to a common incorrect answer of 27. The use of a scale factor was rare.
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Question 18

Candidates who produced and used an organised list did better than those who did not. The most common error was to include 1 as a prime number. Some candidates added rather than multiplied.

Question 19

It was rare to see candidates find the LCM in **(a)**, but several gave the correct answer from listing times. Many who attempted this question and did not reach 1807 scored 1 or 2 marks for listing times.

Question 20

Many scored 1 mark in **(a)(i)**, usually for 0.8 on the first branch. Some did complete the tree diagram though reversed 0.2 and 0.8 on some branches. In **(a)(ii)** many correctly used 0.8 and 0.8, but the majority of these added to give 0.16 rather than multiplying to give 0.64.

Question 21

Many candidates did not realise this was a reverse percentage question and instead attempted to find 15% of 1426.

Question 22

Few candidates realised the need to write equations, many just used trial and improvement with very few getting the correct answers. Candidates who realised the need to write equations often scored 2 marks.

Question 24

Candidates should be encouraged to use the compound interest formula rather than the 'year on year' method, as that often lead to the loss of the accuracy mark due to rounding off values for each year. Several candidates gave the value of the investment rather than the interest.

Question 25

Although few candidates were able to give the final answer, several scored some of the marks. Many were able to use 52km/h to find the distance travelled. Some of these were also then able to correctly calculate 54km/h. Changing decimals of an hour to hours and minutes is not something candidates find easy.

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