

Principal Examiner Feedback

Summer 2015

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Foundation (Non-Calculator) Unit 3

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GCSE Mathematics 2MB01

Principal Examiner Feedback – Foundation Paper Unit 3

Introduction

The paper was accessible to all students, with all questions attempted by a good proportion of students.

The standard of work seen was good but students did seem to find the geometry questions more taxing.

When problem solving students must answer the question asked and fully finish questions, also rounding too early can lead to inaccuracies or impractical answers.

Report on individual questions

Question 1

A well answered question which allowed students access to the paper. Some students found part (d) difficult and multiplied by 3 instead of using the paper.

Question 2

Most students were able to state the congruent shapes. However in part (b), a proportion of students gave the incorrect answer of c.

Question 3

Part (a) was well answered but many students were unable to correctly answer part (b). In part (b), many students rotated the shape instead of reflecting it.

Question 4

Both parts of this question were well answered. Occasional arithmetic mistakes were seen which then led to incorrect answers.

Question 5

Students were able to score on this question, 0.25 and $\frac{15}{100}$ were usually correct. Occasionally $\frac{17}{40}$ was converted into a percentage rather than a fraction.

Question 6

Students found this question more difficult. Some realised that reverse operations should be used but were not always able to use them in the correct order. Many students used a trial and improvement method to answer this question, full marks can be achieved if the answer of 6 is correct but part marks are not available for this method. Students should not leave answers embedded in working, they should be encouraged to place their final answer on the answer line.

Question 7

A variety of methods were seen for this question. Some worked in the total number of apples but others tried to look at the number of bags of apples. Both methods were acceptable but part bags were often ignored or rounded. This approach often led to an incorrect final answer but scored full method marks. Some students mixed methods but were given appropriate credit for their approach.

Question 8

This is another question in which a variety of approaches could work. Some students found the total number of people in each car, others found the number of drivers and the number of passengers, both methods could lead to the final total required. The most common errors seen were to ignore the drivers in the cars with 2 passengers or to add up all the people except the drivers in the cars without any passengers. Most students scored at least one method mark on this question.

Question 9

Students often find time a difficult concept and some common errors were seen. For example, 210 minutes was often converted to 2 hours 10 minutes. A more unusual error seen was to convert $\frac{1}{2}$ hour to 60 minutes, also $\frac{1}{2} + \frac{1}{2} = 1$ was used as 1 minute not 1 hour.

Once a time was calculated it was usually compared to 3 hours correctly. Please note a total time was not always required as some students compared combined times of 1 hour, 1 hour and 90 minutes with the 3 hours/180 minutes available. This method could gain full credit.

Question 10

Students found this question more challenging. Some could deal with the scale but drew bookcases on all of the grids and "9 large with 3 small" was a popular incorrect answer.

Question 11

This question saw many correct answers, however far too many students still appear incapable of drawing an enlargement. All lines seemed to be equally challenging with many students failing to draw the bottom line correctly or drawing two new sides of different lengths. A few correct enlargements of scale factor 3 were seen and these gained one mark.

Question 12

The question got progressively harder and students' success rate did fall during the question. Part (d) saw a variety of approaches. A good number of students gave the correct answer but a common incorrect answer was 7 seen from $5+7=6=18$ on occasions.

Question 13

Some students drew excellent tessellations covering the whole grid correctly. Others did not draw anything hence displaying a lack of understanding of the word 'tessellate'. Centres are advised to remind students of the meaning of this word to allow access to this type of question.

Question 14

Many students were able to successfully deal with this question. Many found the price for petals correctly and showed $4 \times 3.90 = 15.6(0)$. The most common mistake seen was to do 2.95×10 and not then deal with the buy one get one free offer by dividing this answer by 2. There, students could not score the communication mark as accuracy was required at this point.

Question 15

Mathematically a well answered question, very few arithmetic errors were seen. The most common error was in the comprehension of '6 equal monthly payments'. Some students divided by 12 whilst others devised their own six-monthly plan of unequal payments. Whilst most dealt with the concept of the deposit well, a very few divided this by 6.

Question 16

A variety of approaches were acceptable and seen for this question. Many students realised there are 30 'lots of' 100g in 3kg and multiplied by 30 initially. Very few dealt with 1kg of each, preferring to deal with 3kg and arriving at the correct answer of £4.50. Unfortunately, students did not always complete the question and often failed to divide this figure by 3 to get the correct answer. Centres are advised to again remind students to check they have answered the question asked.

Question 17

Part (a) was well answered by many. In part (b) the correct answer was often seen. Some working was also shown and this usually gained credit if the final answer was not correct. For example, $6.5 \times 10 = 60.5$ was a common incorrect answer which, as working, could gain a mark but if 0.5 was seen as the answer only students did not score.

Question 18

A reasonably well answered question. Many accurate scale drawings were seen and if answers were not fully correct they were usually partially correct.

Question 19

For foundation students this was a difficult question. Some found one or two correct trials and scored marks however few went on to give 4.8 as the final answer. 4.7 was more popular and the most popular incorrect answer was 4.77. These students could still gain credit for the work shown.

Question 20

Many students gave the correct answers in part (a) and dealt with the negative value well. Others were unable to deal with the cube irrelevant of the sign of x . Plotting coordinates was fine for students but many lost the last mark by not drawing a smooth curve through the points. Several line segment graphs were seen.

Question 21

Many students correctly found 4.5% of 300. However not all could then divide their answer into 50 or repeatedly add to find out the number of years required. A few students used compound interest and there was a special case for this approach but centres are encouraged to ensure that students check they have answered the question asked.

Question 22

It was expected that this question would be answered by setting up an equation and solving it, this was not the approach of many on this paper. Many students tried numbers and some successfully found the correct answers. A common incorrect approach was to just rewrite the question but never actually do anything with the statements or expressions formed.

Question 23

Some students were able to use Pythagoras' Theorem to calculate the diameter of the circle. However few students were able to move beyond this point many used area instead of circumference. This question was not well answered by students at this level.

Summary

Based on their performance on this paper, students are offered the following advice:

- read the question carefully
- display full working
- check final answers for appropriateness.

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