Principal Examiner's Feedback

November 2016

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

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GCSE Mathematics B – 2MB01

Principal Examiner Feedback – Foundation Paper 2

Introduction

The paper proved to be accessible to all students with most at least attempting every question.

The level of basic arithmetic, even with a calculator was at times poor, with many students failing to show intermediate steps of their calculations.

Students also appear to have a lack of knowledge of basic units and how to convert which in various questions caused a problem.

REPORT ON INDIVIDUAL QUESTIONS

Question1

This question was answered well in general. Students struggled in particular with part b converting 0.75 to a fraction. Some also mistook 0.04 for 40% rather than 4%

Question 2

Part (a) and (b) were both answered very well, with almost all students scoring full marks. Part (c) was only slightly worse. Many students answered this part by recognising that 80 was even and the rest of the sequence was odd.

Question 3

This question showed that centres have done a good job of teaching negative numbers in context as almost all were able to answer both parts correctly.

Question 4

In part (a) most scored at least 2 for a fully correct method, quite a number dropped the final mark due to poor arithmetic. Many struggled with part (b) mainly because the time difference crossed over the hour, it was this that caused many of the problems. There was some confusion in part (c) about the correct notation required for 12 and 24 hour clocks.

Question 5

Many students had a good go at this question and most were able to convert 3.4 kg to 3400 g and hence scored the M1 for a subtraction seen in consistent units. Those who dropped the A mark usually did so because they attempted the subtraction without their calculator.

Question 6

A large proportion of students failed to recognise the name of the shaded region in part (a). In part (b) most were able to get 2 of the 3 marks, many mixing up vertices with edges and dropping the final mark.

Question 7

Part (a) was answered really well, with the majority of students choosing the correct 3 digits in the correct order. Part (b) proved to be more challenging with a lot of students picking the "6" for the hundreds digit, rather than 5.

Question 8

Almost all students were able to score something on this question. A large proportion achieved the first M1 for one of various acceptable first steps. Few scored 2, as those who had a complete method went on to get full marks.

Question 9

Part (a) and (b) were answered well by most students. Part (c) however proved too much for many students. The vast majority of students had no idea what the graph of $y = x$ looks like, with many simply joining point *A* to the point plotted in part (a)ii.

Question 10

Most students scored something, but many struggled to score more than one mark. In part (a) many chose the parallelogram rather than the rhombus. Typically in part (c) students gave one correct answer, normally shape E, but failed to get the second one correct.

Question 11

This problem was too much for many students. In fact many didn't get much further than one mark for the perimeter of the triangle and then possibly the B1 for the units. It was possibly the lack of diagram that caused many to struggle and students should be encouraged to draw diagrams in similar problems to aid their solution.

Question 12

Unfortunately many students misinterpreted the information given and either thought that $BD = BC$ and hence gave y as 68°, or gave BAC as 68°. Both these cases normally resulted in no marks being awarded.

Question 13

Both parts of this questions were answered well by most students. Almost all were able to read the distance from home for part (a), and again many achieved the mark in part (b) for recognising the flat part of the graph represented no movement and interpreted the graph correctly.

Question 14

A large number of students had no method to start this question at all. Rather than starting by listing multiples of 4 and 5 many just chose random numbers or multiples of 2 and 3.

Question 15

Students had a good go at this question, with many scoring one mark for starting the problem. Some struggled with the conversion from miles to km or vice versa. This was typically due to either misunderstanding the conversion given, or like with other questions, students making arithmetic mistakes by not using their calculators.

Question 16

Parts (a) and (c) were a struggle for a lot of students. In part (a) many forgot to multiply the second term when expanding and so didn't score either mark, and in part (c) many didn't really understand the concept of factorising. Part (b) however, was answered very well.

Question 17

A good number of students were able to score 1 or 2 marks for deducting 10% to get 180 and then for starting to share the 180 in the ratio $1:2:7$. However many got no further as their method often didn't include the 20 places when adding up at the end.

Question 18

This question was found to be very challenging for almost all students. Generally students scored zero, or some scored one for either one correct volume $(\text{normally } 10\times2\times1.5)$ or more rarely for finding the area of the parallelogram.

Summary

Based on their performance on this paper, students should:

- ensure they check all arithmetic with their calculator to eradicate basic errors.

- use a calculator correctly, paying attention to using the correct order of mathematical operations.

- learn the basic metric unit conversions and be able to apply them in a context.

- use diagrams to help display given information as a way to start a problem.