Principal Examiner's Feedback

November 2016

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Foundation (Calculator) Unit 1

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GCSE Mathematics 2MB01
Principal Examiner Feedback – Foundation Paper Unit 1

Introduction

The paper was accessible to all students, with every question attempted by most students.

It was encouraging to note that students showed their working on the starred (QWC) questions.

Many students lost marks because they did not read the question properly. For example, in question 5 some students started with the steam train activity from 10 15 to 10 40 even though Tom only arrived at the theme park at 10 20 whilst others ended with the jeep safari from 14 00 to 14 45 even though Tom needed to leave the theme park by 14 30.

REPORT ON INDIVIDUAL QUESTIONS

Question 1

This question proved to be a good starter question with most students scoring all the marks for the first two parts. In part (c) the most common error was to try to find the total **value** of the coins in the box. This involved numerous calculations to try to get the 1 mark that was available for this part.

Question 2

Parts (a) and (b) were well answered with nearly all students scoring the marks. Part (c) was also correctly answered by most students with the most common incorrect response being 2.

Question 3

Parts (a) and (b) were well answered with nearly all students scoring the marks. Part (c) was also correctly answered by most students but many students drew a hexagon and 2 triangles rather than a hexagon and 1 triangle for Saturday.

Question 4

Many students did not appreciate that the number of cards with an A on it was half of the total number of cards. There were as many incorrect responses of 'likely' as there were correct responses of 'evens'! However, nearly all students were able to go on and get parts (b) and (c) correct.

Question 5

It was good to see that nearly all students scored on this question although quite a few students did not read all the information and so started earlier than 10 20 or finished later than 14 30. A few students were not able to add on the time taken by the activity to the start time correctly. The most common correct response seen was where they started with the jeep safari at 11 00 followed by the penguin feeding time, and the dolphin show and finishing with the steam train ride at 14 25.

Question 6

This was well answered with many correct answers seen. The most common error was to omit the labelling of the vertical axis.

Question 7

Most students found the mode correctly. Many were able to provide the correct median although some students did not first order the numbers, providing 7 as the median. These students scored 1 mark for the special case in the mark scheme. Virtually all students could work out the range correctly although a few only scored 1 mark as they wrote $1-7$ as their answer, failing to work out the difference between the two numbers.

Question 8

Part (a) was well answered by all students. Part (b) was well answered by most students with 'unlikely' being a common incorrect response instead of providing the correct numerical probability. Most students were able to score this mark for either writing down the probability of getting a total of 6 or the probability of getting a total of 7.

Question 9

There were many good tables for a data collection although some who had a column with the three drinks and a column for tallies omitted a third column for frequency. Sadly, quite a few students just designed a question for a questionnaire or drew a bar chart, both of which did not score. There were many correct answers to part (b) with working clearly shown. However, many students managed to get to £7.10 or £1.42 but then went no further. It was disappointing to note that quite a few students worked out a fifth off by merely subtracting one fifth from 7.10 or thinking a fifth was 20p (perhaps thinking 20%), arriving at an incorrect answer of £3.10 from $£10-£6.90$.

Question 10

Most students got the correct answer for part (a). Those that did not mostly scored 1 mark for $20:15$ but then failed to simplify this correctly. Students found part (b) a more challenging task with many incorrect answers such as $x-y$ or $x-20+y-15$.

Question 11

Nearly all students were able to complete the two-way table correctly.

Question 12

Most students were able to take a reading from the graph but many of these then failed to work out the amount Tony was paid which resulted in an answer between 310 and 320. Commonly students worked out that he was paid £225 for 500 miles but did not then know to do another reading at 200 miles to complete the process. Another common error was to just look at the reading for one small 2 mm square with 10 miles bringing in £5. Multiplying this by 70 to get £350 did not provide an answer within the given tolerances. Just looking at the reading for one small 2 mm square also affected their answer to part (b) with many not scoring on this part. Those students who used their answer to part (a) tended to work out divided by their answer to (a) getting an amount of £2.20 per mile rather than taking their answer to (a) and dividing it by 700. A few students wrote an answer of £45 without showing any working which resulted in no marks being scored.

Question 13

Nearly all students understood what was required. However, it was not uncommon to see the key omitted or seeing an incomplete key such as 4|7 without seeing $=47$. Many students missed out one of the weights, losing one of the available marks.

Question 14

Many students could successfully describe the relationship between the hand length and the foot length, either by commenting on the greater the length of the foot, the greater the hand length or vice versa. Many scored the mark for stating 'positive correlation', sometimes together with a correct statement. However, there were many students who just wrote that the relationship was positive rather than writing 'positive correlation' thereby scoring no marks in (a). Part (b) was very well answered. Most students correctly estimated Toby's foot length between 24 and 25 inclusive, often without drawing a line of best fit.

Question 15

In part (a) many students thought that you could only listen to music on the radio whilst others did not write a question to find out how much time people spent listening to the radio ... writing a question to find out how often people listened to the radio instead. The most common error with student's response boxes was to have overlapping regions. It was not uncommon to see $1-3, 3-5, 5-7$ etc. Others overlapped zero by having boxes of 'do not listen to the radio' and '$0-2$' or omitted the time frame altogether.
In part (b) the most common incorrect response was stating that people who dance automatically listen to the radio.

Question 16

The final question on the paper was well answered with many students scoring all 5 marks, generally for 457.8 and 456 and often with a statement that Fraya was short by £1.80. The most challenging part was in working out 15% of 168 with many just doing $168-15=153$ and many others finding 15% of the total expenditure.

Summary

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

- read the question again after answering to ensure their answer is what is required.

- students should ensure they use black or blue pens to ensure their writing is visible online to examiners. Other coloured pens should not be used, particularly when drawing diagrams and making a key as examiners find it hard to distinguish between the different colours. It is more sensible to see a key with different types of shading such as stripes and dots or shaded bars and unshaded bars.

- when using a graph to find the gradient, students should be encouraged to use a large triangle rather than just looking at a 2 mm square.

- when completing a stem and leaf diagram students should ensure they count up all the values in their final table and check that this is the correct amount of values by looking at the original question.