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Principal Examiner Feedback

November 2014

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

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GCSE Mathematics 2MB01
Principal Examiner Feedback – Foundation Unit 1

Introduction

The paper proved to be accessible with the majority of the students attempting all the questions. Overall, the paper was done very well by the majority of students.

It was pleasing that many students showed sufficient working out to gain method marks when the final answer was incorrect. Working was often well set out.

Algebra remains a weakness with many students unable to write down two correct expressions in Q14 from the information given.

Report on individual questions

Question 1

Students demonstrated a very good understanding of pictograms. Part (a) was answered extremely well with students using the key correctly to find the number of books sold on Monday and, in part (b), almost all students gave the correct number of books sold on Wednesday. In part (c), the vast majority of students completed the pictogram correctly.

Question 2

In part (a), the mode was well understood. In part (b), the majority of students knew how to work out the mean. Errors included keying into a calculator so that only the final value was divided by 10 and adding up the numbers but arriving at an incorrect total. Part (c) was answered very well with most students able to find the range correctly. The wrong answers resulted from students using 6, not 5, as the lowest value. In part (d), students knew that the range would not be affected and it was pleasing that many were able to give a good explanation. A common error was to give an incomplete explanation that referred to only the highest value not being affected by the inclusion of 7.

Question 3

All three parts of this question were answered extremely well.

Question 4

The majority of students worked out that the most money Joanna could save was £4.45. Many realised that she would save the most by buying the three most expensive items and only did the one addition but some students tried more than one combination before selecting the one that gave the biggest saving. A few students worked out the cost of three items but failed to subtract £5.

Question 5

This question was well answered with most students choosing to present the data using a dual bar chart, with the days labelled along the bottom and with a key given for maximum and minimum temperatures. The bars were almost always drawn at the correct heights. Some students lost the final mark through not labelling the vertical axis or for labelling it incorrectly, e.g. with 'frequency'. A small number of students drew line graphs or compound bar charts. A scatter graph, though, is not a suitable diagram for the comparison of maximum and minimum temperatures.

Question 6

In part (a), almost all the students gave the correct time. In part (b) it was pleasing that the majority of students gave schedules for Mike's journey that were not only fully correct but also clearly presented. Errors included not choosing the correct train to return to Cromer or failing to include times for both the journey to Norwich and the return journey.

Question 7

Part (a) was answered very well with the majority of students marking the probability at 0.3. Some students placed the cross too close to 0 although others placed it at 0.5 or even above 0.5. Almost all students were successful in part (b). Part (c) was not answered quite as well. The most common error was to identify the letter A instead of the letter I.

Question 8

Most students scored at least one mark for working out or using a correct duration of time, e.g. working out that Liz finished work at 2.30pm, and many went on to give the correct answer. In an attempt to find the number of hours between 11.30am and 2.30pm some students wrote down '11.30am, 12.30pm, 1.30pm, 2.30pm' and then gave the answer as 4 hours.

Question 9

This question was perhaps not as well answered as might have been expected but nevertheless many students knew that the median is the middle number and were able to give two numbers in both (i) and (ii) so that the median of the four numbers was 5. Some students may have confused the median with the mean as 5, 6 and 4, 7 were common incorrect answers.

Question 10

This question was generally answered well with many students able to convert £60 to euros or 70 euros to pounds and then give a correct comparison. Some students did both conversions although this was not necessary. A few students wrote conclusions that contradicted their values.

Question 11

The majority of students were successful. Those who could not work out both 5% of 300 and $\frac{2}{5}$ of 300 were few in number. Some students, having found 5% of £300 and subtracted it from £300, worked out $\frac{2}{5}$ of the money left instead of $\frac{2}{5}$ of £300.

Question 12

The vast majority of students worked out the total number of women in part (a). Most went on to complete the two-way table correctly and use it to give the correct answer in part (b). Part (c) was answered less well. The most common incorrect answers were $\frac{12}{50}$ and $\frac{23}{50}$

Question 13

Most students were able to work out a correct estimate for the number of times Olu takes a red counter. The most common method seen was 0.6×50 although some students showed no working at all.

Question 14

This question was answered very poorly. Students struggled to write down correct expressions for the number of cars Harry and Regan each sold. Common errors included writing $5x$, rather than $x + 5$, for the number of cars Harry sold and either x^2 or $x + 5 \times 2$, instead of $2x$, for the number of cars Regan sold. Some students were awarded one mark for adding three correct expressions but $4x + 5$ was usually then given as the final answer. Very few students attempted to divide their total by 3. Many students did not appear to appreciate that Regan sold twice as many cars as Dan or that the question asked for the *mean number* of cars sold.

Question 15

Part (a) was well attempted with most students giving at least one correct reason. The fact that Tendai only asked women and the small sample size were frequently identified. The railway station location was also commented on by many students although some went on to say that she should have used the bus station instead and gained no credit. Some students gave answers which did not address the methodology of how the sample was being taken, e.g. 'no time frame'. Most students were able to design a suitable question in part (b) which included a time frame for frequency of use and response boxes that were both non-overlapping and exhaustive.

Question 16

This question was answered well with the majority of students drawing a correct stem and leaf diagram. Marks were most commonly lost through failing to provide a key. Other errors were omitting one or two heights from the diagram, leaving the diagram unordered and failing to put two-digit numbers in the stem.

Question 17

Part (a) was answered extremely well with the vast majority of students able to plot the point at (47, 34) and in part (b) most students identified the correlation as positive. A few students either did not attempt to describe the correlation or described it as negative. Most students answered part (c) correctly, often without drawing a line of best fit. Students should be encouraged to show a clear method on the graph as, without this, answers just outside the required range cannot be awarded any marks.

Summary

Based on their performance on this paper, students should:

- practise writing down algebraic expressions from given information
- ensure that they know the difference between the median and mean
- draw a line of best fit, as appropriate, when using a scatter graph to find values
- remember to provide a key when drawing stem and leaf diagrams

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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