

Principal Examiner Feedback

March 2012

GCSE Mathematics (2MB01)
Paper 5MB1F_01 (Calculator)

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GCSE Mathematics 2MB01

Principal Examiner Feedback – Foundation Paper 1

Introduction

This is a calculator paper. It was evident from some work that candidates were attempting the paper without the aid of a calculator. This is not advisable, since calculation errors will cost marks.

Generally the standard of work on this Foundation paper was considered to be an improvement on previous series' of this paper. A greater proportion of candidates were able to make inroads into many of the unstructured questions, whilst still gaining marks on questions which had a more traditional style.

The inclusion of working out to support answers remains an issue.

Report on individual questions

Question 1

There were many candidates whose work demonstrated a lack of understanding with regard to mileage charts. Figures not correctly associated with place names were read off, or figures and place names misaligned.

Question 2

Part (a) and part (b) were usually answered correctly.

In part (c) nearly all candidates were able to interpret the tallies correctly as figures. But there were two types of error leading to the final answer.

The first type were arithmetic errors: despite this being a calculator paper there were too many cases where a simple column of numbers were incorrectly totalled.

The second type of error related to an understanding of what was a 'vehicle'. This was well defined in the table: all six modes of transport were defined as 'types of vehicle'. Nevertheless some candidates chose not to include 'bicycle' in their total.

Question 3

Given the unstructured nature of this question, it was well attempted, with most candidates gaining full marks. Presentation was really good, with many choosing to give dual bar charts, and some two combined line graphs. Some presented two separate charts, which was also acceptable. Most also showed the difference between Alexa and Ryan on their diagram by use of a key, or labelling. The main reasons for loss of marks included errors in the heights of bars, a failure to provide consistent labelling, or incomplete diagrams or numerical scale.

Question 4

This question was usually well attempted. Errors usually occurred when candidates mis-read the wrong detail from the table in answering a question, but errors were rare.

Question 5

In parts (a) and (b) candidates usually chose the correct word from the list.

In part (c) most put their cross at "0".

Part (d) was problematic for a significant minority.

Having given word descriptors in parts (a) and (b) some chose to do so again in part (c), rather than a numerical probability for this specific event. There were also errors in determining the total number of letters (required for the denominator). There were few examples of probabilities given using inappropriate notation for probability.

Question 6

Part (a) was well answered with most candidates demonstrating the ability to accurately read from graphs; only a few were not able to use the scales correctly.

In part (b) the requirement to work out the cost of one unit of gas caused many problems. Many gave answers relating to other quantities (other than one) and were unable to reduce this to a unitary cost.

In contrast part (c) was far better attempted, the only significant error being the failure to include monetary units with their answer; it was essential that candidates stated whether their answer was in pence or in £. It was encouraging to see most candidates drawing clear lines on their graph in answering the various parts of this question, which aided examiners in their interpretation of methods used by candidates.

Question 7

Most candidates gained some marks from this unstructured question, and those who showed clear working gained the most. Though the items were clearly displayed, some weaker candidates still included only one £8.10 in their total. Working out $\frac{1}{3}$ off' was also a major inhibitor, with some relying too much on their calculator in using 0.3 or 1.3, and then not dealing with the calculator display properly. Most went on to calculate the change, but again some attempts were spoilt when they found the difference with £20 rather than £40

Question 8

There were some really good attempts at this question. A table or detailed listing of times and events was particularly useful when marking, but detailed stories also attracted the marks, particularly if these contained the full details necessary. Not all candidates listed the times for each stage of the journey, for example many failed to mention the time they left home. Marks were still awarded when candidates chose to introduce their own aspects to the journey, for example a leaving early to avoid the 'rush-hour', or a planned coffee break in Chelmsford before attending the meeting. It was disappointing, however, when candidates directed Sue to get off the train in London rather than in Chelmsford.

Question 9

There is always some confusion between the various statistical measures. Candidates find it difficult to remember which one is which. This appeared to be less of a problem than in previous series, with many candidates picking up full marks. In calculating the mean candidates should always be advised to write down the full answer from their calculator. Some rounding (to 2.26) was allowed, but further than this was penalised.

In part (b) the question asked for a comparison, with the mean and range given. Most candidates wrote something about the mean and range, but it was rarely a comparison.

Frequently they copied down the figures, or worked out the difference. What was really needed was a written summative statement using descriptive terms, which is why lines were printed for the answer.

Question 10

Parts (a) and (b) were well answered, though in (b) poor arithmetic sometimes denied candidates the final mark.

Part (c) is usually well answered, but on this occasion a significant minority of candidates introduced errors such as the names of the two people or triple combinations. The most common omission was those where they both chose the same drink.

Question 11

Pie charts remain a poorly answered question. Many errors were seen here, such as in totalling the frequencies, calculating the angles, and accuracy in drawing the angles. There were also many guesses seen when it came to drawing angles suggesting that protractors were not always being used by candidates with too many pie charts in which there were more than four sectors.

Question 12

The phrase 'greater than 2' confused some who still included the 0.20 in their sum. Probability notation is a problem for some, equally in part (a) and part (b), where some gave the answer as probability rather than a number of times. Candidates also need to be aware of the difference between being asked for a description of a probability (using a word) and working out a probability, which is a number.

Question 13

A very practical question requiring a detailed answer. Ordering and setting out of working is very important so that examiners can see what is being developed. Choice of the correct column to work with was important at the outset. Whether the calculations were done for 1 or 2 people was not important, as many recognised. The main discriminator was whether a candidate could work out a percentage, which was essential for developing the solution to the problem. The conclusion was recognising which company was the cheapest, through a statement given at the end of the problem, but candidates also had to demonstrate through their working how they had arrived at their conclusion.

Question 14

Despite a request in the question for an ordered stem & leaf diagram there were many that were not ordered. The key was not always consistent with their design of the stem & leaf diagram. The range was usually given correctly. For the median some chose to re-write all the numbers in order, despite having an ordered stem & leaf diagram. But candidates had significant problems in identifying the 'middle' value(s) in their list of numbers, despite much evidence of counting, crossing out, etc.

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