

Principal Examiner Feedback

Summer 2016

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

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GCSE Mathematics 2MB01

Principal Examiner Feedback – Higher Paper Unit 1

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 calculating of a gradient difficult and gave limited comparisons.

Report on individual questions

Question 1

A well answered question which allowed students access to the paper. The common wrong answer in part (a) was to just say biased without giving any reason.

In part (b) quite a few responses were seen with no time frame given. Several students discussed the number of times rather than time spent and some lost 1 mark on the answer boxes with overlapping, inequalities or non exhaustive choices given.

Question 2

Overall this was a well answered question. Most students stated positive for part (a) with just a few trying to describe the relationship in full sentences.

Most students estimated the number of children correctly and part c was almost always plotted correctly.

For part (c)(ii) there were many good comments about holidays, weekends or hot temperatures.

Question 3

A pleasing number of students went all the way to $x + 2$, a fully simplified expression was not necessary and full marks were awarded prior to simplification.

A common error was for students to write $x + 10 - 4$ not referencing x for each person. A few forgot to include x for Alex. The brackets were occasionally missed but it was more common to see the answer given as an algebraic fraction. The use of algebraic fractions was pleasing to see.

Question 4

As is usual with this type of question, part (a) was better answered than part (b). In part (b) 37.499 is the minimum requirement 37.4 is not sufficient.

Question 5

This was a well answered question with many fully correct answers seen. For those that did not score full marks a score of 1 was often awarded for 1800×0.03

The most common difficulty seen was subtracting 0.03 from 1 with some subtracting 0.03 from 100 instead, or 0.3 from 1

Careful reading of the question is recommended.

Question 6

A huge variety was seen in this question. There were many fully correct answers. There were some who decided that 117 was the number of tulips planted.

Others divided the remaining people in half. They then used 110 as the angle as well. There was some working out seen but students would have benefitted from showing more working on this style of question. When working was seen 1.1 was often used instead of 1.111.. bringing rounding errors into the final answer.

Question 7

Many fully correct answers were seen. The usual misconception of dividing by 5 was seen in part (a), along with a more unusual error of using 2000 for each 'midpoint'.

Part (b) was well answered, with the only real error seen being a silly mistake for example 4 instead of 64 as the final entry,

In part (c) a few scatter graphs were drawn and several students plotted the midpoints. Almost all joined their points with smooth curves although line segments are acceptable.

For part (d) many correct answers were seen and follow through was allowed for all marks in this part of the question and the scale was used well. The most common errors seen were to use 70 instead of 64 as the total frequency or find the median instead of the interquartile range.

Question 8

This question was well answered. Clear communication of the final answer including the £ was required for the final mark and sometimes this was not always given. The main issue seen was finding one twentieth of the money received. Several wrong methods were seen finding 20%, 0.5% or just taking away 0.05. When ratios were used, they were usual used correctly.

Question 9

The box plot was usually well plotted however there were some errors seen in finding the figures prior to plotting.

In part (b) several students quoted correct values but did not compare. Lots of students scored 1 because they did not put their comments into the context of the question. Many discussed either median or range but not both.

Question 10

Many students scored full marks on this question, others scored M1 for either 98×5 or 114×7 .

The most common error seen was to just multiply any two out of 98, 114 and 162 with no thought to what these might mean. This showed a lack of comprehension of the question asked.

Question 11

The vast majority of students gained full marks on this question. The two most common errors seen were to use simple interest or a multiplier of 1.25 instead of 1.025. Students should be reminded of the difference between simple and compound interest.

Question 12

Students found this question challenging.

In part (a) a large number of students used change in x over change in y , possibly as this gave an answer greater than 1. Others failed to use a large enough triangle to gain an accurate answer.

In part (b) many wrote down a correct answer but some discussed the relative speed of the trains and gave incorrect statements. There were a significant number who discussed the correlation of the speed, thus misunderstanding the question entirely.

Question 13

Many correct answers were given. Some students arrived at 14.1 but did not state 14. Other errors seen were to find the number of girls or both girls and boys for the age group 16-59. Some used the correct three numbers but not the correct calculations.

Question 14

This question split the cohort with almost the same proportion scoring full marks as scoring no marks. The most common wrong answer was to add the probabilities and then divide by 3, thus finding an average.

Some answers of adding the three probabilities were seen but as this gave an answer of 1.1 this figure was usually then manipulated, either by a division by 3 as stated or by 10, presumably to give a decimal answer.

Question 15

For part (a), some fully correct answers were seen whilst some students just plotted the frequency without considering frequency density. A few scale issues were seen with students starting at 0.2 instead of 0 or using 0.3 for every 2 cm. A few missed the width of the last interval and plotted 70 to 80 instead of 70 to 85

In part (b), there were fully correct answers or answers arriving at 19.1. The ability to split the rectangles was seen but not the ability to arrive at a total. Those trying to count squares generally made little headway in this part of this question. Some students did arrive at 19.1 but failed to round to a whole number of eggs. A common error was to average 20 and 17 and give 18.5 as the final answer.

Question 16

Many tree diagrams were seen but there was then a lack of calculations carried out. A few sample space diagrams were drawn but these were rarely used to produce any probabilities. A small number of students worked with decimals rather than fractions and the use of fractions in this type of question is preferable. There were some fully correct answers seen.

Summary

Based on their performance in this paper, students should:

- show clear working out
- learn the basic to support problem solving eg finding $\frac{1}{20}$ of an amount.

Grade Boundaries

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

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

