Principal Examiner Feedback

Summer 2014

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Unit 1: 5MB1F_01 (Foundation)

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

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

Introduction

Most students made an attempt at all the questions and performance was better than in previous sessions.

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

Particularly in QWC or longer questions presentation of ordered method is key to gaining the many method marks available on this paper.

This was a calculator paper and many different ways of performing calculations were seen, including some non-calculator methods (usually unproductive).

All candidates should be reminded to bring a calculator to this calculator examination, and be encouraged to use calculator methods (rather than non-calculator methods).

Report on individual questions

Question 1

This question was generally well done with the majority of students getting full marks. In part (c) however it was not uncommon to find ambiguous answers, where symbols drawn failed to resemble half circles.

Question 2

Most students were able to identify the correct line in the table from which to elicit their answer, but weaker students sometimes picked the wrong item on that line to write on the answer line.

Question 3

Usually a well answered question. However sometimes the answer given in (c) did not explicitly mention a downward or falling trend in temperatures.

Question 4

This question was not as well answered as is usually the case. In part (b) there were many guesses, with crosses commonly placed at $\frac{1}{4}$ or $\frac{3}{4}$. In part (c) a significant number of students failed to mention the "not" and placed their cross at $\frac{1}{4}$ instead of $\frac{3}{4}$.

Question 5

Time is a universal weakness, which was again demonstrated in this question. With calculators there was evidence that for some students this was treated incorrectly as a simple decimal calculation. Others put the 25 together with the 2.40 or 6 in some way, but not always logically. Weaker students simply failed to understand the nature of the problem, but still gained some marks by finding 3.05 or 5.35. This was not the case for a few students who worked with 50 minutes each way instead of 25 minutes. The most significant error was incorrect presentation of the answer: commonly 2.30 without any reference to units.

Question 6

This question was normally well answered. The only errors came from omissions.

Question 7

Most students gained full marks for correct tallies, though some miscounted and gave 4,8,7,3 as their frequencies; this error was not penalised later in the question.

A variety of diagrams and graphs attracted marks, the most common a simple bar chart. The most common errors were missing labels off axes, and incorrectly plotted numbers. Overall presentation was poor, with many students failing to use a ruler.

Question 8

This is a QWC question, and some of the marks were therefore awarded for presentation, in this case evidence of use of the graph. Students are usually taught to draw lines of their graph to show how they are reading off, which led to the award of a mark even if the reading was taken incorrectly. Some failed to gain full credit since they merely presented their readings, or stated "£6 less", without actually answering the question by stating it would have been cheaper.

Question 9

This was quite well answered with little confusion between the three statistical calculations requested. In part (b) numbers were usually ordered, but weaker students were confused by not having a single number in the centre of their list, sometimes choosing either one of the numbers as their answer, to find the mean of their two numbers. In part (c) the most common error was in calculating 12×6 rather than 12×7.

Question 10

Essential to gaining any marks in this question was some understanding of staged charges: a first charge added to a charge per unit, sometimes referred to as a standing charge per unit cost. Preparation for this type of question is important, and those students who were familiar with this charging structure gained many, if not all of the marks in this question. It was most common to find students stating the charge correctly for Quick Mix. For Speedy Hire some worked out 7.20 × 4 (instead of ×5) though usually included the delivery cost. As long as there was some sensible working out shown, examiners could give credit for a sound conclusion based on their working, but a random guess without support gained no marks.

Question 11

In part (a) students could either convert to percentages to make the comparison, or find 10% of 360° for a comparison to be made. Both methods were equally popular, though the latter more successful. Some had difficulty in converting to a percentage from a fraction (e.g. $\frac{40}{360}$ or $\frac{1}{9}$). In part (b) many realised that they had to first find the missing angle for those who cycled, and this was presented in working, on the diagram, or frequently as their final answer. Only a minority went on to use this to calculate the number of students who cycled.

Question 12

Parts (a) and (b) were well answered. There are few instances these days of students writing probabilities inappropriately, i.e. using ratios or odds. Decimals were accepted for probabilities as long as these were written to at least 2 d.p. The most common error in part (c) was giving the denominator as 72 instead of 32.

Question 13

A significant number of students failed to understand the nature of this problem, but still gained some marks if their working out was shown, for example by using the ratio 1:9 correctly. There was some confusion between orange squash and orange drink, which might have led to the most common error where students worked with 750÷200, which is filling cups directly with orange squash, rather than orange drink. There was much evidence of poor arithmetical processing in this question, suggesting students did not always have a calculator.

Question 14

The point in part (a) was always plotted accurately if given. Part (b) was also well answered, the most common error in identifying a single point rather than a relationship (e.g. the most drinks were sold at the maximum temperature) or by giving a partial answer (e.g. negative rather than negative correlation). Too many in part (c) gave lines of best fit that were too far distanced from the points, or merely joined up each of the points. Whether or not a line of best fit was drawn, most students were able to give an answer in (d) that was reasonable, sometimes choosing to ignore their line and give a better answer using estimation.

Question 15

This question was not well answered, and poor algebra inhibited many getting to the final answer. Many realised that they needed to take red from 20, and not infrequently $20 - x$ was seen in working. Writing this as a probability was a step too far for most. Some confused the issue by introducing their own variable (commonly y) for yellow, giving expressions in both x and y (e.g. $x + y = 20$) but then found rearrangement difficult.

Question 16

A question that was well answered. In part (a) most students referred to the lack of a time frame, or that boxes were vague in their description. Few recognised that the question was deliberately leading or biased. Some answered by giving counter-examples which were not always replicated in part (b).
Part (b) was also well answered by many, with questions accompanied by a set of response boxes. The most common omissions were questions that failed to make reference to a time frame, or response boxes which were not exhaustive. In the latter case this included those which did not include "0", those with gaps, or those who merely stated "more" (more than what?). There were few cases where intervals were overlapping.

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