Principal Examiner Feedback

Summer 2013

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

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from 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
Many candidates were able to make inroads into some 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 for many; it is extremely difficult to track the method used by candidates who present a page of disorganised working spread across the answer space. 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).

Report on individual questions

Question 1
This was generally well done with the majority of candidates getting full marks.

Question 2
Candidates who knew the correct conversions gained full marks on this question.

Question 3
Time is a universal weakness, which was again demonstrated in this question. Candidates were usually able to read the time from the clock, but working with time duration in part (b) was flawed. With calculators there was evidence that for some candidates this was treated incorrectly as a simple subtraction. Others partitioned, working out several bits of time which they then tried adding together; not a bad method, but one which relied on accurate arithmetic, and sometimes conversion of time units. Some lost the final mark since they expressed the answer incorrectly (eg using decimal notation) or failed to indicate units.

Question 4
This question was usually well answered but candidates need to take greater care when drawing symbols on the pictogram. Weaker candidates treated each symbol as 4, rather than the 20 stated in the key.

Question 5
It was not uncommon to find candidates mixing these measures up in their attempts to answer the question. In part (b) some candidates failed to order the numbers before selecting the middle one, whilst in (c) attempts were flawed by poor arithmetic.

Question 6
This question was normally well answered. The only errors came from omissions or repeats.

Question 7

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. A small number of candidates attempted to draw compound bar charts by putting the bars one over each other, which failed to then enable comparison.

Question 8

Working out bills of this nature continues to be weakness of Foundation candidates. Not all understood that a subtraction was required; many added either the readings, or amounts of money associated with the readings. There were also problems with units, since some candidates thought they were working in pounds. Some put the decimal dot in the wrong place in their numerical answer, and failed to recognise this gave them an unrealistic answer. This was also a QWC question; many candidates gave the answer numerically rather than as an amount of money, thereby losing the final mark.

Question 9

This was quite well answered. Most candidates were able to identify at least one of the items from the table. Not all candidates read the question carefully enough: it was not uncommon for candidates to merely list the prices without finding the total cost.

Question 10

Weaknesses in algebra persist, as demonstrated by this question. In part (a) $4+d$ was seen, as were numerical answers. Those unable to answer part (a) failed also in part (b). There were many answers which involved letters and numbers but not many which included them in the right order or combination.

Question 11

Fewer questionnaires and graphs were seen. Most included a table with three columns but some then either forgot column headings, or what was needed. For many the difficulty was in giving heights as class intervals since this was continuous data. Overlapping class intervals were common, as were integer values. There needed to be sufficient labels in the column to cover the majority of typical heights of students.

Question 12

Part (a)(i) was a simple measurement but clearly some candidates did not have a protractor so took a guess. Marks were given in (a)(ii) for correct use of their stated angle, even though this sometimes led to an unrealistic answer. Sight of a guessed angle such as $\frac{1}{6}$ or $\frac{1}{8}$ was also common. In part (b) most realised the angles had to add to 360°, but some used 380°, 180° or 200° instead of 360°. Finding a fraction of 60 was also a problem for some. Again use of a "guessed" fraction such as $\frac{3}{8}$ resulted in no marks; answers needed to be based on angle calculations.

Question 13
There were relatively few cases of candidates using incorrect probability notation. Part (a) & (b) were well answered; the only problem in part (c) was from miscalculation. Some lost the mark in (c) through failing to state the probability correctly (sometimes using ratio notation).

Question 14
In part (a) most candidates could identify the greatest height, but some gave it as "8" or "6" rather than "68". In part (b) weaker candidates went for the median or the mean; but again some gave the mode as "7" rather than "37". In part (c) the mean was again common. Those trying to find the median found counting the numbers difficult, as evidenced by answers of 37 or 43.

Question 15
In part (a) not all candidates appreciated that the question was missing a time frame: a reference to a time period over which the time should be measured. Most recognised that the descriptors under the boxes were in appropriate, in a variety of ways. In part (b) candidates would have been better using their own answers to part (a) to improve on the given question, but it was not always the case that they did so. Some gave a question that was not related to the description at the top of the question as to the purpose of the survey. There were many varied responses to part (c) but most were valid reasons.

Question 16
There remains a lot of confusion about frequency polygons. Weaker candidates confuse them with bar charts, or plot the points at the ends of the interval. Others plot them as if a scatter diagram, without joining the points. What to do at the ends is a further confusion, and some joint the two end points. Candidates who drew a bar chart gained some credit if the midpoints of the top of the bards was indicated, but no credit if the corners were used instead. Candidates who superimposed a polygon on top of the bar chart could get full marks.

Question 17
This provided lots of differentiation, and was a challenge to many candidates. Those who realised that a 2-way table was the best way of organising the data made considerable in-roads to the solution. Unfortunately many who merely tried to work with lots of smaller calculations became utterly confused with what they were trying to find. Some credit was given for some calculations, as long as they were deemed as "staging posts" as part of a coherent strategy working towards a solution.

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

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

CEA

Rewarding Learning