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Principal Examiner Feedback

March 2012

GCSE Mathematics (1380) Foundation
Paper 2F (Calculator)

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GCSE Mathematics 1380
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Introduction

It appeared that a number of candidates failing to bring a calculator to this examination. Many candidates failed to show any working out. It is also important for candidates to write down working, even when using a calculator. There was also some evidence that candidates were attempting some questions which required measurement without a ruler or protractor.

Simple presentation of written numbers is not always good. Examiners frequently had difficulty in recognising digits, with 7s that look like 4s, etc. Equally is the problem with decimal points: in too many cases decimals or amounts of money were written and examiners could not see a decimal point where they expected it to be.

Report on individual questions

Question 1

There was some confusion in part (c) with some rounding to hundred instead of thousands, and in part (d) some candidates stated 7 thousand instead of 7 hundred.

Question 2

It was surprising the number of candidates who were not able to carry out a measurement in parts (a) and particularly part (c). The evidence suggests that many felt guesswork was necessary in the absence of a ruler or a protractor.

In part (a) many also lost a mark since they failed to state the units they were using for their measurement.

Question 3

Most candidates were able to state a metric unit to make a measurement, but were less sure of an imperial measurement. Candidates who stated an actual measurement (numerical as well as a unit) were not penalised.

Question 4

There were some errors in counting colours and displaying them in the table. Some candidates chose to ignore the request to represent the data as a bar chart, and instead chose another form of chart: bar line, scatter and polygon not uncommon; credit was of course lost.

Part (c) was answered well by those who remembered what the mode was.

Question 5

This was a well-answered question. Crosses were usually clearly placed and there were few issues of tolerance: answers were either right or wrong.

Question 6

It was encouraging to see many correct responses to this question. Working was not always shown. There was evidence of some inverse operations being used, but also trial and improvement methods. Candidates who demonstrated the correct number in an expression had to clearly identify this as the solution to the problem.

Question 7

Part (a) was well answered, the only error being the reversal of the coordinates.

In part (b) candidates were less confident with their answer, requiring recall of the properties of a parallelogram. Whilst a cross was usually an accurate way of identifying the point, use of an “S” was less obvious, and was frequently placed ambiguously.

Question 8

This question was well answered by candidates.

Question 9

It was clearly essential that only odd numbers be considered. This question also required some knowledge of prime numbers: it was evident that many candidates did not possess this knowledge, and merely listed a set of calculations without any resolution.

Question 10

The standard of basic algebra appears to have improved slightly from the evidence of this paper. In parts (a) & (b) a small number gave a^4 instead of $4a$ and confused some operations and/or signs. It was rare to see any working in finding solutions to equations, though many correct answers were seen.

Question 11

Many correct answers here. Some chose to write their answers next to the sequence, which was quite acceptable.

In part (b) this was more difficult with having more numbers to write down, but was a sound approach to getting to the answer.

In (c) there was the usual confusion between $4n$ and $n+4$.

Question 12

The evidence from many candidates is that they were not reading the question sufficiently well. This included situations where candidates only added one of each item, or failed to find the change using their total. There were also situations where candidates mixed monetary units.

Question 13

There were the usual problems of candidates merely writing the numbers in, to give $26+24$.

In part (a) correct substitution usually led to the correct answer.

In part (b) substitution was also credited where this was in the complete formula. But there were far more examples of trial and improvement in this part; candidates were fortunate that the number was an integer, and those who gave the correct answer obtained the marks. Some demonstrated the answer “9” worked in a formula but failed to indicate that the number 9 was the solution to the problem.

Question 14

A question that was well answered. Candidates need to be advised that when a question asks for a name of a town that it is the name that is expected as the answer, not the temperature.

Question 15

Many candidates are not secure in statistical language, and it was not uncommon to find median and mean not being used, but another type of calculation. This could happen in any part of the question.

In part (a) the main error was in not ordering the numbers.

In part (b) it was not uncommon to find the numbers added, but then not divided by 6.

In part (c) only a minority of candidates gained marks. The most common method seen was where candidates found the total for the 7 numbers, and also used the total for the 6 numbers to find the number required.

Question 16

Most candidates correctly identified the missing angle as 130°; few gained the mark for the geometrical justification required, usually because their answer was incomplete. Centres need to be aware of the published criteria for this; only answer with wording such as 'angles at a point sum to 360°' will get the mark.

Question 17

There were many examples of compound interest here, even though the question clearly asked for a simple interest calculation. Early credit was given for use of the simple interest formula, or a 4% calculation as an early step. There were many examples where the answer was left as £2.5; centres need to be aware that writing answers in incorrect money notation can be penalised.

Question 18

Part (a) was well answered, with many candidates gaining full marks. The most common incorrect method was undertaking a division.

In part (b) there was also some good work shown by those who showed their method, with many starting by converting the $67 to pounds. Some then finished without working out the difference. Those converting the £47.50 to work out the difference in dollars frequently forgot to them convert their answer back into pounds as requested in the question.

Question 19

In part (a) there were almost as many reflections in other lines as there were in the *y*-axis. A common error was to draw their *y*-axis reflection just one square to the right of the *y*-axis.

It was a surprise to find so many incorrect answers in part (b). Regularly shapes were provided that were of the wrong scale factor, or lengths of lines drawn inconsistently. Only a minority of candidates gave a fully correct answer.

Question 20

Bearings are not well understood, as evidenced by the responses to this question, which were usually poor. Rather than taking the acute angle at P many tried to calculate either the obtuse, or the reflex angle at Q.

Similar problems persisted in part (b), where it was most common for a single mark to be given for a point 6 cm from Q but at the wrong bearing. The end of the line had to be clearly identified; use of R alone would not identify this point sufficiently clearly.

Question 21

Some very poor responses to a question which is usually well-answered. Mistakes included doubling instead of squaring, incorrect square rooting, incorrect of operation, and a false reliance on calculators to sort it all out. Even the rounding was done less well than previously.

Question 22

Substitution into an incorrect equation could not gain any marks. Candidates had to show their trials to be evaluated to gain any marks, and the final answer had to be rounded to 3.2 Too many gave their answer as an unrounded decimal, or as 3.1

Question 23

The most common error was in adding the squares, or doubling the numbers rather than halving. Those who squared correctly and then found the difference usually went on to get the correct answer.

Question 24

In contrast this was a well-answered question.

In part (a) candidates had to be careful to use correct probability notation in presenting their answer.

In part (b) they had to be careful to present their answer as a single number rather than as a probability.

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