Pearson

Examiner's Report
Principal Examiner Feedback

Summer 2018

Pearson Edexcel International GCSE
In Mathematics A (4MA0) Paper 1FR

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Introduction

Good answers were seen to all questions; on the whole, students appeared to be well prepared for this paper.

Knowledge of the meaning of the statistical terms mean, median and range appeared to be lacking from some students. Some students had difficulty using their protractor to measure an angle; indeed some angles given were so far out it was possible that not all students had a protractor with them during the examination.

On occasions, figures in numbers were difficult to read; students must ensure that they do write their answers clearly. Any errors should be crossed out and replaced and not written over.

Question 1

This question was well done.

Question 2

There were hardly any incorrect answers seen in part (a). In part (b) students needed to both draw the bar to the correct height **and** write in the label. A significant number of students failed to write in the label, some misread the scale and drew a bar of height 8.5 rather than 9. Parts (c) and (d) were both well done with very few errors seen.

Question 3

More correct answers were seen in part (d) than in any other part of this question. Whilst many correct answers were seen in part (a) there were some blank spaces and a variety of 'random' numbers seen on the dotted line. The concept of a 'mixed number' was clearly not recognised by a significant number of students as 2.75 was a very popular incorrect answer. Whilst part (c) was well answered, there were some incorrect answers seen; these were usually 3 or 0.3. There were a surprising number of blank responses to part (e).

Question 4

It was very rare to see an incorrect answer in part (a) although a very few students misunderstood the question and worked out the term that came before 96 rather than the 6^{th} term of the sequence. Part (b) was well done. Inevitably, 6 was very occasionally seen as an incorrect answer in part (c).

Question 5

The majority of answers in part (a) were within the allowable range. There were far fewer correct answers in part (b); whilst it was easy to see that the incorrect answer of 70^{o} came from using the wrong scale on a protractor, there were a number of bizarre answers such as $26^{o}, 270^{o}$ which suggested that maybe not all students had a protractor with them in the examination. It was not uncommon to see either a blank response in part (c) or two additional lines drawn with the correct two lines of symmetry. Approximately half of all candidates gave the correct answer in part (d). Common incorrect answers included $4, 90^{o}$ and 180^{o}.

Question 6

Very occasionally 6.2 rather than 6 was given as the answer to part (a). There were fewer correct answers in part (b) with some students dividing rather than multiplying by 0.6. Whilst many correct answers were seen in part (c) a significant number of students were unable to show a correct method to find the cost of 750 grams of onions. The most common incorrect method was to multiply by 750 rather than by 0.75. Some students used the incorrect conversion of 100 g to 1 kg and appeared not to be perturbed by the fact that the bill came to more than 5 euros.

Question 7

Part (a) was well done. Many of the responses to part (b) were correct; a wrong answer generally came from subtracting from 180^{o} rather than from 360^{o}. Part (c) was well done.

Question 8

Occasional errors were seen in part (a) but answers in part (b) were invariably correct. Incorrect answers were also rare in part (c) but when an answer was incorrect it was -16 rather than 16.

Question 9

g and $1g^4$ were relatively common incorrect answers in part (a). When there was an incorrect answer in part (b) it was usually 12 from subtraction rather than division. The commons error in part (b) were either to do multiply both 2 and 5 by 3 and then add the products rather than evaluate $3 \times 2 \times 5$ or to evaluate $46 - 325$. Following the correct substitution in part (d) the common errors were to subtract 43 from 21 or add 21 to 43 rather than subtracting 21 from 43.

Question 10

The mean or mode were sometimes found in part (a) rather than the median. The common error from those who attempted to find the median was to order the numbers but then give both 9 and 10 or 9 or 10 as the median rather than 9.5, others knew that they had to use 9 and 10 but sometimes added or subtracted these values rather than finding the mean. A number of students knew to find the middle value but failed to order the list of numbers Part (b) was done better but some still found the mean or subtracted the first number in the list from the last, again without ordering. Part (c) was well done although the denominator was occasionally given as 10 rather than 8. Part (d) was not well done; a significant number of students used the scores given at the top of the page rather than the information in part (d) and so gave the common incorrect answer of $\frac{2}{8}$. Some of those who did use the information in part (d) attempted to use the 9 in the question with $\frac{5}{6} \times 9$ frequently seen. Success was equally varied in part (e) with some students again using the probability from the list at the top of the page and so evaluating $\frac{6}{8} \times 50$ rather than the correct $\frac{5}{6} \times 50$.

Some students also failed to gain the accuracy mark as they gave a probability, $\frac{50}{60}$ as their answer rather than the number of times Helga would score 9 or more in the game.

Question 11

Parts (a) and (b) were mostly correct as was part (c) although it was surprising to see some blank responses – possibly students without access to a calculator? A minority of students gave the answer in part (d) correct to 3 decimal places rather than to 3 significant figures.

Question 12

Whilst a good number of fully correct solutions were seen to both parts, the line $x = 1$ was frequently drawn instead of $y = 1$. Some students appeared not to have seen the instruction in part (a) to draw the line $y = 1$ but, nevertheless were able to give a correct response in part (b).

Question 13

Part (a) was usually correct although a number of students did give their answer as a fraction rather than as a ratio as required by the question. Others wrote down the initial ratio correctly but then made errors in cancelling. In part (b), the common incorrect approach was to find the difference in the number of turns and subtract this from 60 – this approach was seen far more than the correct method and answer.

Question 14

The relatively common error in part (a) was to forget to halve and so give $48\ \text{cm}^2$ as the answer rather than the correct $24\ \text{cm}^2$. Conversely, having multiplied their answer to part (a) (the area of the cross section) by 25 (the length) some students then divided by 2. Whilst some correct solutions were seen in part (c) it was not uncommon to see just four rather than five areas added or a completely incorrect method usually involving either adding or multiplying all the given lengths.

Question 15

Those who knew to divide 360 by the given angle invariably scored full marks. However, there were a good number of incorrect answers in part (a) seemingly coming from a guess. Interestingly, there was a far greater success rate in part (b) with many correct answers seen. The majority of students understood the correct approach to take but not all could give or work out the sum of the interior angles of a pentagon.

Question 16

A good number of candidates were able to correctly select set *B* in part (a). The very common error in part (b) was to give the attributes of the fish in sets A and B but then join these with 'and' rather than 'or'. There was more success in part (c) with many fully correct descriptions seen.

Question 17

Very few fully correct solutions were seen to this question. The vast majority of candidates failed to give correct expressions for perimeter in part (a) and so were unable to make any headway with part (b). Many numerical answers rather than algebraic expressions were given in part (a).

Question 18

About half of all candidates gave the correct modal class in part (a), $7-9$ was a common incorrect answer, as was 12 which did not answer the question. When the modal class is required students must give the class interval and not the frequency. There was some success in part (b) with a good number of correct answers seen. Common errors included dividing 32 (the number of dogs) by 5 (the number of classes), dividing 208 (an estimate for the total number of puppies) by 5 (the number of classes) or using the end of interval values rather than mid-interval values to find an estimate for the total number of puppies.

Question 19

Whilst some fully correct solutions were seen, a number of students resorted to their calculator to evaluate $\frac{27}{8}\times\frac{9}{4}$ and so gave $\frac{3}{2}$ as the result of this calculation without first either showing cancelling or giving $\frac{108}{72}$ the failure to show this interim step meant that only two out of the available three mark could be awarded. When asked to 'show' that a statement is true, all steps must be shown.

Question 20

A good number of incorrect approaches were seen to this problem. These were usually either using Pythagoras's Theorem incorrectly or attempting to use trigonometry. A surprising number of students, having used Pythagoras's Theorem correctly in the first step, forgot to take the square root and so gave 104 as their answer.

Summary

Based on their performance in this paper, students should:

- write all figures clearly
- learn and recall the meaning of the various statistical terms; mean, median, mode, range
- practice measuring angles with a protractor
- show all steps when a question uses the phrase 'Show that…'