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Examiners' Report

Principal Examiner Feedback

Summer 2017

Pearson Edexcel International GCSE
In Mathematics A (4MA0) Paper 2FR

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Introduction to Paper 2FR

The paper was in line with previous papers with more straightforward questions at the beginning. Most questions seemed accessible to students at this tier but, as expected, those towards the end of the paper proved more challenging.

Report on Individual Questions

Question 1

Most students answered part (a) correctly, although some wrote their answer as 2416 rather than 24016. Parts (b), (c) and (d) only proved challenging to a few. Likewise, parts (e) and (f) were answered well, although some multiplied 8 by 48 in (e) and 60 by 750 in (f).

Question 2

Only a small proportion weren't able to score full marks in parts (a) – (c). In part (d), those who didn't gain both marks often picked up one for an unsimplified but correct ratio or 7 : 5.

Question 3

Most students were able to correctly complete the number line in part (a), although some wrote the numbers in the reverse order. Again in part (b), the most common error was to start with the largest number. In part (c), students sometimes attempted to find the difference between 72 and -58 by subtracting 58 from 72.

Question 4

Most students gained full marks in parts (a) and (b) with some giving their answers as equivalent fractions or percentages.

Question 5

Students generally performed well in part (a). Some subtracted 9 from 2142 in (ii) and divided 243 by 11 in (iii). In part (b), some demonstrated a misunderstanding of order of operations while in part (c), a few found the square of 1521. In part (d), those who didn't score full marks often had partial success by finding the value of 8^2 .

Question 6

Parts (a) and (b) weren't generally answered well because many weren't sure of the difference between edges, faces and vertices.

Question 7

In part (a), errors included mm and inches in (i), tonnes and pounds in (ii) and metres in (iii). In part (b), a significant number of students didn't know how to convert from litres to millilitres and vice versa. Others assumed juice was poured from the jug into 1 glass, not 3.

Question 8

Almost all students were able to draw Pattern number 4 in part (a). Part (b) was more challenging, although a number of different correct methods were seen, including listing the terms of the sequence, drawing Pattern number 11 and evaluating $11 + 11 + 13$.

Question 9

Many students showed a lack of understanding of the meaning of perimeter by including the length of EB in their calculation. Others tried to use Pythagoras' Theorem to find the lengths of AE and AB rather than use the fact that triangle ABE is an equilateral triangle.

Question 10

A large number of students didn't understand bearings. In part (a), many found the acute angle at B while in part (b), many marked the position of C a distance of 7 cm from B but not at a bearing of 070° from B .

Question 11

Parts (a) and (c) were answered well but part (b) proved more problematic, with many giving an answer of 4 hours and 45 minutes.

Question 12

Most students scored at least one mark. Those who failed to give a fully correct answer often gave cake as one of their options rather than realise it referred to brownies, doughnuts and flapjacks.

Question 13

Those who didn't draw a fully correct line often didn't score any marks. Those who did score partial marks sometimes drew a correct line through 3 points or a line with a gradient of 2 or a line with a positive gradient through $(0, -1)$.

Question 14

In part (a), many students subtracted the score on the Spinner from the score on the Dice rather than subtract the smaller number from the larger number. Those who incorrectly answered part (b) often used words, such as unlikely.

Question 15

Part (a) and (c) were answered correctly by many students. Errors included $13am$ and $3am$ in part (b), and $9y$, $9y^2$ and $9y^3$ in part (d).

Question 16

Although many candidates answered this question correctly, a very common answer was 9. This was usually arrived at as a result of incorrectly finding the volume of the triangular prism by multiplying its base by height by depth.

Question 17

Both parts were answered quite well. Some students prematurely rounded after one step of working which then led to an incorrect answer.

Question 18

Some students appeared not to be familiar with sets. Those who were, sometimes answered parts (a)(i) and (a)(ii) the wrong way round. In part (b), most scored zero or full marks. Those who scored 1 mark often omitted 10 from their answer.

Question 19

Those who didn't give a fully correct answer often scored one mark for 102.66. Those who didn't score, sometimes gave an answer of 34.804, which was arrived at by dividing 5.8 by $\sqrt{3.4}$ rather than dividing the whole numerator by the denominator.

Question 20

Those who didn't score full marks in part (a) sometimes scored one mark for finding 3 correct terms. Others failed to score by adding x to 7 and getting $7x$ and subtracting 3 from x and getting $3x$. In part (b), some added $3p$ or subtracted 9 from both sides of the equation. Parts (c) and (d) were generally answered well although some multiplied the powers in (c) and divided the powers in (d).

Question 21

This question proved challenging to many students. Some tried to answer it by trial and improvement while other subtracted the equations rather than added. Those who made 1 arithmetic error often scored 2 marks by substituting their x or y into one of the equations.

Question 22

Some students were not sure of the meaning of mode and mean. Those who did have this knowledge were able to correctly answer part (a). Part (b) was more challenging. Some found the total distance travelled but then divided by 5 while others multiplied the end points by the frequencies.

Question 23

In part (a), some wrote 3.5 on the answer line despite writing the correct inequality in the working space. Part (b) wasn't generally answered well. Some just drew a cross at -1 while other drew a line in the wrong direction. Students often scored full marks in part (c), although some omitted 0 from their answer and others listed -3, -2, -1, 0, 1 to gain one mark.

Question 24

Many students didn't know how to start this question. Some tried to use decimals while others weren't successful at converting the mixed numbers into improper fractions. Those who scored the first mark then often failed to multiply the first fraction by the reciprocal of the second fraction.

Question 25

This wasn't accessible to a large number of students. Those who were familiar with Pythagoras' Theorem sometimes added the square of 18 and 13 while others who subtracted correctly then failed to find the square root of 155.

Summary

- Students would benefit from not rounding prematurely
- It was clear that only a few students had a basic understanding of bearings
- Students should ensure they understand the meaning of faces, vertices and edges
- Students would benefit from learning basic set theory notation
- Questions 5b and 19 highlighted a lack of understanding of order of operations for many students

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