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Examiners' Report/ Principal Examiner Feedback

Summer 2014

Pearson Edexcel International GCSE Mathematics A (4MA0/1F)

Pearson Edexcel Level 1/Level 2 Certificate Mathematics A (KMA0/1F)

Paper 1F

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Principal Examiner's Report

International GCSE Mathematics A

(Paper 4MA0-1F)

Report on Individual Questions

Question 1

The vast majority of students scored full marks for parts (a) to (d), but some struggled to find 30% of 8520 in (e). A lack of understanding of percentages saw the occasional division of 8520 by 30.

Question 2

Most students scored one mark for listing two or more factors of 30, with approximately one third of students able to write down all eight. A small number of candidates gave multiples of 30, instead of factors.

Question 3

This was answered well across all ability ranges. The overwhelming majority of students were able to draw a correct line of symmetry in (a) and most could find the perimeter in (c).

In (b), most achieved a correct fraction and so gained a mark, although not all were simplified for full marks. Adding two squares to make a shape with rotational symmetry of order 2 proved a little more challenging with just over two thirds of students achieving the mark.

Question 4

Almost all students were able to find the next two terms of the sequence in (a).

Likewise, in (b), there was a very good appreciation that to find the next term it was necessary to add four, although a variety of explanations were seen. Finding the 12th term in (c) proved to be a challenge for about a fifth of all students, and in part (d) about two thirds weren't able to explain why 100 wasn't in the sequence. Many students incorrectly justified this by saying that 100 doesn't divide by 4.

Question 5

Writing down the coordinates of points *A* and *B* in (a) and (b) prove to be accessible questions for most students, although a small number of students did not remember the correct notation for coordinate points and interchanged the *x* and *y* coordinates.

However, recognising *ABCD* as a trapezium for part (c) was problematic for about half of the students.

Most students accurately measured the angle in d(i). Occcasional incorrect answers were seen, and this showed that a small number of candidates do not understand that "angle *BAD*" is referring to angle *A.* The name of the angle in (d)(ii) was relatively well known.

Just over half of the students managed to find the correct area of the trapezium in (e). Many students used the method of counting the squared and so managed to score one mark (the Method mark) for an area of between 16 and 20 inclusive.

Question 6

On the whole, students demonstrated a good understanding of the mode and median in (a) and (b). Occasionally, the middle number of the unordered list was found for the median which of course scored zero marks.

Only a minority of students were unable to write the word that described the probability of the two outcomes described in (c). Likewise, in (d), most were able to choose an appropriate numerical probability to describe a situation.

Question 7

The vast majority of students were able to correctly order the list of numbers in (a) with only a small number confusing the relative size of negative numbers.

Part (b) tested the ability to deal with using negative numbers with the four operations. This, again, was answered well but the two questions with two negative numbers (parts ii and iv) caused a few more problems.

Question 8

Students tended to be good at using the 24-hour clock to write down 2 45 pm and to work out the length of time between 11 45 am and 2 45 pm in (a) and (b) respectively. More than two thirds were able to find the distance between the two service stations given the time taken and the average speed, although some students incorrectly divided the average speed by time.

Question 9
Most students were able deal with (a)(i) competently.

Over half of all students simplified the expression correctly in (a)(ii). Of those who did not score full marks, a significant number scored one mark for identifying $4x$ or $-3y$ $4x$ or $-3y$. Those who arrived at $4x - 3y$ but then attempted to simplify further were penalised by loss of the final (accuracy) mark.

Over three quarters of students managed to solve the equation in (b). Some did so by an algebraic approach, others by a numerical method. It wasn't unusual to see 5 subtracted (instead of added) from both sides of the equation therefore failing to score any marks.

Question 10
A fully correct solution was produced by less than half all students. A large number managed to find angle *ADB* or *CDB* but could go no further. A common incorrect approach was to use angles *DAC* and *DCA* as 35º and hence conclude that angle *ADC* is 110º.

Question 11
This question was answered very well. A large proportion of students scored full marks. Those who didn't, sometimes picked up one mark for multiplying 13.5 by 4.

Question 12
Although full marks were achieved by almost one third of students, there was a wide range of answers given. Part (a) was accessible to most students, with only a small number failing to score at least one mark.

In part (b), many scored full marks but part (c) proved more of a challenge. Many didn't appreciate the need to use the table to find the probability that George's score was 10.

Question 13
Most students were able to order at least three of the fractions in (a) correctly although some determined their list by the size of the denominator.

In part (b), a large number of students were unable to find a correct method to divide the two fractions.

Question 14
More than half of all students were able to use their calculator competently and also round their answer correct to three significant figures thus gaining full marks. Those who failed to score full marks in (a) often scored zero because they didn't evaluate the numerator or the denominator. Some students also didn't appear to have a grasp of BIDMAS and so divided by 7 before adding $\sqrt{2}$.

Question 15

In part (a), a relatively small number of students were able to identify the transformation as a reflection, but even fewer managed to identify the line of symmetry as $x = -2$.

Part (b) was more accessible and most students were able to rotate the shape 90º degrees clockwise, with almost all of those students getting the new shape in the correct position.

Question 16

This question was challenging to students at the lower ability ranges, and it highlighted the algebraic weaknesses of many students. In part (a), most weren't able to simplify $8d \times 7d$, with a large number giving an incorrect answer of $56d$. They were more successful at expanding the bracket in part (b), although many didn't understand how to factorise in (c).

In part (d), some students did manage to substitute $g = 2$ to find H but 2^3 was often confused with 2×3.

Question 17

Less than a quarter of students scored full marks with the majority only picking up at most one mark. Those who were successful tended to start by multiplying 64 by 4 and 70 by 5. Unsuccessful attempts included dividing 64 by 4 and 70 by 5.

Question 18

Nearly half of students scored no marks with only a few managing a fully correct solution. Those who picked up one mark usually did so by locating *D* at a distance of 9.6 cm away from *A*.

Question 19

More than half of students managed to find the intersection of *A* and *B,* although this proved more successful than the union of *B* and *C* in part (ii).

In part (b), just over half were able to interpret the intersection of *A* and *E* being an empty set although explanations given were often a little vague or ambiguous.

Question 20

Approximately one third of students correctly found the percentage increase in Helen's savings. Those who didn't score full marks tended to score one mark, often for subtracting 155 from 167.4

Question 21

Almost all students either produced a fully correct solution or a completely incorrect solution thus scoring full or no marks. More than half scored no marks, and from the incorrect methods seen, a number of students did not realise they had to use trigonometry on this question. Others used the sine rule incorrectly or chose the wrong trigonometric ratio, typically 12.2 x cos38.

Question 22

This question was challenging for all but the most able students. For those who did not score full marks, the majority managed to score one mark for the correct area of one face. Those who didn't manage to score any marks often added some of the sides together whilst others attempted to find the volume of the prism.

Question 23

Drawing the line $x+2y=8$ in part (a) proved challenging for all but the most able students.

In part (b), some students were able to draw $x=2$ and $y=1$. Some students made the mistake of confusing the lines $x=2$ with $y=2$ and $y=1$ with $x=1$. Students should be advised to draw the lines that form the boundary of the region **R** and not just rely on shading to define the region.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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