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Examiners' Report/ Principal Examiner Feedback

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Pearson Edexcel International GCSE Mathematics A (4MA0) Paper 3HR

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The demands of this paper proved to be appropriate; the vast majority of candidates were able to demonstrate positive achievement and many scored high marks. The majority of candidates gave sufficient explanation and showed their working clearly. The use of algebra was very strong whereas it was noticeable that questions testing statistics and probability were less well done.

On questions where there is more than one step needed to get to the final solution, candidates would be well advised to keep full accuracy until the final answer and only round their answers to the appropriate degree of accuracy at the end.

Question 1

The majority of candidates gave the correct answer to this question. Of those that didn't, the most common error was for candidates to find the products correctly but then divide by the sum of the number of goals (15) rather than the sum of the frequencies (25) which was given in the question. The other error was to divide the sum of the number of goals by 5.

Question 2

It was rare to see an incorrect answer to either part of this question. When this did occur it was usually when a candidate attempted to divide 24 in the ratio 3 : 5 in part (a) rather than answer the set question.

Question 3

Common errors were an answer of 72^o in part (a) and 120^o in part (b). A minority of candidates did not read the question carefully and thought that they were still working with a pentagon in part (b) thus giving an answer of 72^o.

Question 4

It was rare to see any incorrect answers in any part of this question. However, it is worth noting that any candidate who wrote down the answer to part (b) without showing algebraic working scored no marks, although this was a rare occurrence.

Question 5

Some candidates included the number 1 with their answer suggesting that the meaning of the Universal Set is not always understood. A minority of candidates confused factors with multiples.

Question 6

Part (a) was well done. In part (b) the common error was to reduce \$2162 by 23%. Some candidates did not read the question carefully enough and gave \$9400 rather than \$7238 as their final answer. In the final part of this question, a small number of candidates decreased by \$600 three times and seemed unconcerned with giving a negative answer.

Question 7

Both parts of this question were well answered although in part (a) a small number of candidates found the area of the triangle rather than the hypotenuse.

Question 8

Part (a) was generally done well. However, a number of candidates attempted to over complicate the question and find the probability that a card with 2 dots was taken followed by a card with 3 dots and so attempted to multiply rather than add the relevant probablities. There was evidence that some candidates did not read the question carefully enough in part (b) and used the probability that they had worked out in part (a). Many struggled to gain any marks in part (c) although those candidates who clearly understood conditional probability frequently gained full marks.

Question 9

Part (a) was well done. In part (b) some candidates gave their final answer using the equals sign or an incorrect inequality.

Question 10

A small number of candidates made errors in completing the cumulative frequency table or halved each end point value. Whilst most candidates drew a correct cumulative frequency curve, some drew a translation of the correct curve and others attempted to draw a histogram. There was generally less success in finding the lower quartile with some candidates seemingly having no idea how to go about this task.

Question 11

A small minority of candidates confused Lowest Common Multiple (LCM) with Highest Common Factor (HCF). Otherwise, this question was well done.

Question 12

A scale factor of 3 was needed in part (a) and a scale factor of 4 was needed in part (b); some candidates confused the two. Likewise, some used 3^2 rather than 4^2 as the area scale factor in part (c).

Question 13

The majority of candidates scored full marks and understood the link between part (a) and part (b). Those who used the standard elimination and substitution method were generally more successful in getting to the correct solutions than candidates who rearranged one of the equations and then substituted for that variable.

Question 14

A minority of candidates worked out the volume of either the whole solid or part of the solid rather than the surface area. Another common error was to include the base of the cylinder as one of the surfaces and/or the circular area of the cube that the cylinder was standing on.

Question 15

There was a clear lack of understanding demonstrated by many of candidates throughout this question. Whilst many candidates were able to differentiate the given expression successfully in (a), only a small percentage of these realised that they had to differentiate again in part (b) to find the acceleration before substituting the given value of t.

Question 16

This question generally resulted in candidates scoring either full marks or no marks. Some wrote their square root sign in such a way as to indicate that they only intended to square root the numerator of the fraction rather than the whole fraction.

Question 17

Another well answered question although some candidates worked with their first answer correct to one decimal place in the second calculation and therefore failed to give their final answer to the required degree of accuracy. A few candidates assumed, incorrectly, that angle ACB was 90^o and thus scored no marks.

Question 18

The common error in part (i) was to confuse the values of a and c when substituting into the quadratic formula with candidates looking at the position of the numbers within the given equation rather than looking the coefficients. The question asked candidates to show working, so those who wrote down the answer without any appropriate working scored no marks. The majority of candidates were able to interpret their answer to (i) correctly in order to answer (ii).

Question 19

Many correct answers were seen. Those who failed to gain full marks generally picked up one mark for expanding the brackets correctly.

Question 20

Generally very well answered. However, some tried to cancel without factorising and thus gained no marks. A few candidates got to the correct answer but then incorrectly attempted to simplify their answer further and so gained two of the available marks.

Question 21

The majority of candidates who answered this question correctly subtracted the area of triangle OAB from the area of triangle ABT. However, other candidates found the perpendicular height of triangle ABT along with the length of AT and so found the area of the required triangle directly. Unfortunately, a number of candidates were unable to recognise angle AOB as $360 \div 5$ or 72^o.

Question 22

Candidates who understood how to find the inverse function and form a composite function gained at least one mark. Having written down the correct composite or inverse function many did simplify correctly but some either made errors in their algebra or left their answer unsimplified. A common error was to find the product of the functions in (a) rather than the composite function.

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