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**Examiners' Report**  
Principal Examiner Feedback  
Summer 2017

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

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Students who were well prepared for this paper were able to make a good attempt at all questions.

On the whole, working was shown and easy to follow through.

Despite this being a paper where the use of a calculator was allowed, a number of careless arithmetic errors were seen, particularly in question 13. It was clear in question 9 that there is some confusion in regards to the definition of statistical terms; the mean was frequently found rather than the mode.

- 1 Part (a) was invariably correct. There were some errors seen in part (b), the most common mistake was to mark 2.94 or 2.19. In part (c) some candidates had difficulty with rounding 5.72 to the nearest whole number, 5.70 was sometimes seen along with 572 and 573. In part (d) working was frequently absent in which case the incorrect answer scored no marks. A common error was to subtract 1.4 from 4.8 and thus give an incorrect answer of 3.4
- 2 Part (a) was done surprisingly poorly with a number of candidates not reading the question carefully enough and giving the number of shaded squares. Parts (b) and (c) were generally well done. It was rare to see an incorrect answer in part (d); when the response was incorrect it was usually due to the response being a fraction rather than a decimal. Part (e) was well done although some did not give the fraction in its simplest form with  $\frac{15}{25}$  being the common answer that gained one out of the two available marks. Students who gained no marks generally started with the incorrect fraction of  $\frac{6}{10}$
- 3 Part (c) was more often correct than either of the other parts in this question.
- 4 The majority of candidates were able to give the correct name for at least one of the lines; many were able to name all three.
- 5 Acute was the common incorrect in part (a) and  $180^\circ$  in part (b). Many incorrect names for the shaded shape were seen in part (c); the correct name was given by only about a quarter of candidates.
- 6 Candidates found it easier to write down the next term of the sequence in part (b) than they did in identifying the square number in part (a). In part (c) the answer of 'add 4' suggested that some students did not read the question carefully enough. It was not sufficient to say that '150 could not be reached by adding 4' as this was implied by the statement that '150 cannot be a term of this sequence'.
- 7 The vast majority of responses to part (a) were correct; the occasional error seen was to subtract 20 without first multiplying by 4. The same error occurred sometimes in part (b) giving an incorrect answer of  $-28$ . In part (c) a number of candidates worked out  $10 + 20 \div 4$  rather than  $(10 + 20) \div 4$  and so gave an incorrect answer of 15. In the final part of the question the correct formula was sometimes given with  $x$  rather than  $y$  as the subject.

- 8 The coordinates were sometimes reversed in part (a). Similarly, in part (b) the points (1, -4) was sometimes plotted instead of (-4, 1). In part (c) a common incorrect answer was (4, 1); this point gave a parallelogram rather than a rectangle.
- 9 The meaning of the word 'mode' was clearly not understood by a significant number of students. The common incorrect method was to work out the mean but the range and median were also sometimes given instead of the mode in part (a). It was disappointing to see a significant number of incorrect answers to part (b); frequently answers were integers so not even probabilities.
- 10 In part (a), those who realised that an expression could be written for the sum of the angles and then equated this to  $360^\circ$  generally went on to gain 3 marks. Some clearly knew that the sum of the angles was  $360^\circ$  but didn't know how to use this information to find the value of  $x$ . A common error was to sum  $3x$ ,  $3x$ ,  $2x$ ,  $x$  and  $x$  but then get  $8x$  rather than  $10x$ .
- Part (b) was answered more successfully although  $5400 \div 40$  was a common incorrect method.
- 11 The majority of students were able to draw one correct line of symmetry; a frequent error was to draw a horizontal line as a line of symmetry. Order of rotational symmetry is clearly not well understood; many incorrect answers as well as blank responses were seen in both parts (b) and (c).
- 12  $144^\circ$  was a relatively common answer from those who found angle  $ABE$  correctly as  $36^\circ$  but then subtracted this from  $180^\circ$  rather than assign it  $90^\circ$ .
- 13 There were two main sources of errors in this question; errors from copying figures in the menu and arithmetic errors. Apart from these errors this question was very well answered.
- 14 Part (a) was reasonably well done; some gave the incorrect answer of 12 from  $2 \times 6$  rather than  $6 \div 2$ . Those who worked with area rather than perimeter in part (b) generally went on to get the correct answer of 5.
- 15 Some candidates gave a prime number as their response to part (a) but not within the limits specified and so failed to gain the mark. In part (b) there was clear misunderstanding of the word 'sum' by a significant number of candidates with 5, 5 given as the answer along with the working  $5 \times 5 = 25$ . Students tended to gain either full marks or no marks in part (c).
- 16 Whilst many students gave the correct answer there were a significant number who had  $\sqrt{5}$  rather than 5 on the denominator following their substitution; providing this was the only error they gained one of the two available marks. Some of those who did the correct substitution then used a truncated value for  $\sqrt{5}$  and thus lost accuracy.

- 17 It was disappointing to see some students getting as far as  $4x = -2$  and then giving the incorrect answer of  $-2$ . Others made earlier errors in their algebraic manipulation and so failed to gain any method marks.
- 18 Recalling the properties of quadrilaterals correctly caused difficulties for a significant number of students. The biggest misconception regarding the properties of a rhombus was that angles of the rhombus were  $62^\circ$ ; another common error was to subtract  $2 \times 62$  from 180 rather than 360. Using the parallelogram, a significant number thought that opposite angles of a parallelogram were supplementary rather than equal. When working with angles it is important that students either write any intermediate angles found on the diagram or identify these in the working with the standard three letter notation.
- 19 Part (a) was invariably correct although some students failed to give their answer to the required accuracy; in the event of no working shown no marks could be awarded. Part (b) proved more demanding with some multiplying by  $\frac{52}{119}$  rather than by  $\frac{119}{52}$ . A significant number of students failed to read the question carefully enough, converting 8500 baht to pounds rather than taka. In part (c) the conversion of time to a decimal still proves a problem for many with division by 2.24 rather than by the correct 2.4 being a frequently seen error. Students who worked with 144 minutes often forgot to multiply by 60.
- 20 Two common errors were seen in part (a); the use of the formula for the area rather than the circumference of a circle and the use of the 2.5 m as the radius rather than the diameter. However, there were a significant number of responses scoring zero which made no use of any circle formula. The common error in part (b) was to multiply by  $\frac{2.5}{4.7}$  rather than by  $\frac{4.7}{2.5}$ . Some thought that they needed to convert units and this often resulted in an answer of 188 or 0.188 rather than the correct 18.8 cm.
- 21 There were many completely wrong answers to both parts of this question. However, provided students appreciated the need to multiply 21 by 3 rather than 2, the correct answer was generally obtained in part (a). Students who were successful in part (a) generally went on to find the correct age for Ahmed in part (b). However, a significant number missed the instruction to find the range.
- 22 This question was well done with working shown as required in the question. A surprising number of students, having found the correct prime factors, just gave a list of the factors rather than giving a product, others wrote the correct factors in a sum rather than as a product.
- 23 The translation in part (a) was reasonably well done. Some candidates rotated about (2, 0) or (0, 0) or some other centre, rather than (0,2). Others rotated in an anti-clockwise rather than a clockwise direction, sometimes about the correct centre.
- 24 A good number of correct responses were correct but a significant number scored only one mark due to an error in either one of the powers or 7 instead of 10.

- 25 A surprising number of students just found 9.4% of \$607 or increasing by 9.4% instead of decreasing. There were two very common incorrect answers in part (b) \$1584 from those who increased \$1320 by 20% and \$1650 from those who thought that \$1320 was the amount left after a 20% decrease and so divided \$1320 by 0.8. Students who realised that they had to use a 'reverse' percentage method in part (b) almost inevitably went onto gain full marks.

### **Summary**

Based on their performance in this paper, students should:

- learn statistical vocabulary : for example, median, range
- practise working out a percentage of a quantity using a calculator
- read the question carefully and review their answer to ensure that the question set is the one that has been answered
- practise writing time as a decimal.

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