

Examiners' Report/  
Principal Examiner Feedback

Summer 2015

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

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## **Introduction**

Students coped well with the level of the paper with many correct responses seen throughout.

## **Report on individual questions**

### **Question 1**

In part (a) the ‘one hundred’ was occasionally omitted. Part (c) was the least well done; the incorrect answer of ‘tenths’ was frequently seen or no response was offered.

### **Question 2**

The first three parts of this question did not trouble students. Instead of writing the correct ratio 4:3 in part (c)(i) some write the fraction  $\frac{4}{3}$  or cancelled incorrectly to get 2:1.

200 rather than 2 was occasionally seen as the answer to part (d).

### **Question 3**

Many incorrect names were offered in place of ‘kite’ in part (a). The requirement to give the length in millimetres in part (b) caused problems for a significant number of students with 5.4, 5400, 540 and 0.54 given as popular incorrect answers. Whilst most students drew the correct line of symmetry, others added in additional lines and so failed to gain the mark in part (d). It was clear in part (e) that many measured the lengths of the sides and added these thus giving the perimeter rather than the area. A popular incorrect answer was 28 from  $7 \times 4$ ; others measured a long and a short side and multiplied these together – an incorrect method which gained no marks.

### **Question 4**

Some students failed to provide the correct number of dots – sometimes adding in an additional row. In part (d) it was often  $T$  rather than  $n$  that was multiplied by 3. Although many correct formulae were seen, some students deliberately rearranged their formula and so gave a formula for  $n$  in terms of  $T$  rather than a formula for  $T$  in terms of  $n$  as required.

### **Question 5**

There was clear confusion between vertices and edges in part (b). Likewise, in part (c), many attempted to find the surface area rather than the volume. A common incorrect answer was 560 from those students who did not deal with the inconsistent units. The wrong conversion from mm to cm was also seen on a large number of responses.

### **Question 6**

This question was generally well answered. A common error was to add 100 and 78.24 then subtract this total from 520 thus ignoring the six monthly payments.

### **Question 7**

Part (a) was well done. The common error in part (b) was to subtract 12 rather than  $-12$  from 34. In part (c) the common error was to add rather than subtract 7.

**Question 8**

On the whole, this question was not well done. 100 rather than 360 was frequently used in part (a). 15 was a common incorrect answer in (a) from  $1800/120$ . Having found  $100/800$  in part (b), many were then unsure of how to make further progress.

**Question 9**

Part (a) was invariably correct. However, the reasons in part (b) were frequently incorrect with 'corresponding' and 'alternate' the most common incorrect answers. In part (c) a common incorrect answer was  $100^\circ$ . There was frequently working seen in the working space but the angles found were unattributed so no marks could be awarded.

**Question 10**

In part (a) the common method used was to convert the fractions into decimals. However, having produced the correct decimals a number of students then put the fractions in the wrong order. Having correctly written the calculation as  $\frac{2}{5} \times \frac{7}{6}$  some then just wrote the answer as  $\frac{7}{15}$  without showing the initial answer of  $\frac{4}{30}$  and therefore only gained one of the two available marks. When asked to show a result, all intermediary steps must be present. These were generally all shown in part (c).

**Question 11**

Part (a) was extremely well done. The relatively common incorrect answer of  $7 : 18$  showed that some students were unaware of the correct notation to use for probability answers.

**Question 12**

Part (a) was well done although a minority of students, having arrived at the correct answer of 8330, then divided by 100 to give a final incorrect answer of 83.30. Part (b) caused more difficulties with the common incorrect method of  $784 \div 60$ .

**Question 13**

Common incorrect answers were  $t^{12}$  in part (a) and  $8x - 3y$  in part (b).

**Question 14**

There was clear confusion between the interior and the exterior angles from some students with the incorrect answer of 144 seen coming from  $360 - 3 \times 72$

**Question 15**

By far the most common incorrect method was to find the total number of fish and then divide by 6 instead of 40. The product  $0 \times 2$  was frequently evaluated incorrectly as 2

**Question 16**

Many recognised the correct transformation of reflection in part (a) but often failed to identify the mirror line correctly with  $y = 2$  and  $y = x$  being the common incorrect lines. Part (b) was not well done.

**Question 17**

Those who did not understand how to enter the calculation into their calculator in the correct order came up with the incorrect answer of 16.47.

**Question 18**

There were a significant number of blank responses in this question. Many students did produce some working but to no avail. A common error was to start by multiplying 165 by 5 rather than 6.

**Question 19**

A surprising number of students gave the correct method, using tan, to find an angle in the triangle rather than use Pythagoras's Theorem to find the required side. Those who did start using Pythagoras's Theorem correctly sometimes failed to take the square root, giving 193 cm as the answer. There were a number of answers given as 13.8 direct from  $\sqrt{193}$  as the correct answer to 3 significant figures was 13.9 this error lost those students the final accuracy mark.

**Question 20**

Part (b) proved more accessible to students than part (a). A commonly seen error in part (b) was to get as far as the correct  $8 = 2''$  then give the incorrect answer of 4 from  $8 \div 2$

**Question 21**

Question 21 proved difficult for the majority of students. Only a small minority were able to form the correct equation and fewer still went onto solve it correctly.

**Summary**

Based on their performance on this paper, students should:

- learn and be able to apply metric conversions, e.g.  $1 \text{ cm} = 10 \text{ mm}$
- ensure that sufficient working is shown in questions where this is specifically required by the question
- explicitly identify any angles that are being found in geometric questions or write the values on the diagram
- show all stages in where the requirement is to show that a given answer can be obtained
- give the full answer from their calculator before rounding to the given accuracy in the question.



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