

Examiners' Report/  
Principal Examiner Feedback

Summer 2014

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

Paper 2FR

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Principal Examiner's Report  
International GCSE Mathematics A  
(Paper 4MA0-2FR)

Introduction to paper 2FR

Many questions seemed accessible to students at this tier, with fewer non-responses overall than has sometimes been the case.

Most students appreciate the need to show their working. It was noticeable that some aspects of geometry were a weakness. A significant number of students were unable to name 3-D solids and confused edges and vertices. There was also confusion over the properties of a parallelogram.

Report on Individual Questions

Question 1

All parts in this question were well answered with only occasional errors seen.

Question 2

Whilst the majority of students provided the correct answer of 'prism' or 'triangular prism', some incorrectly thought that the shape was a pyramid or a triangle. A number of students did not offer any response.

In part (b), 6 was seen as commonly as the correct answer, 9, suggesting that many students confused edges and vertices. The number of faces was also frequently seen as an answer.

Part (c) was well answered although the common incorrect answer of  $120^\circ$  clearly showed that some students used the wrong scale on their protractor.

Question 3

Part (a) was correct more often than part (b).

Question 4

862 and 200 were common incorrect answers in (a).

Part (b) was well answered.

In part (c) many students found the mean of 26 and 32 rather than find the mean number of spectators at a match.

Question 5

In part (b), a significant number of students scored no marks as they used  $-5$  as the input rather than as the output.

#### Question 6

3,  $\frac{3}{4}$  and  $\frac{3}{32}$  were the most common incorrect answers in part (b).

Whilst many students were able to calculate the points for both countries correctly, some misunderstood and added 3 to the number of gold medals rather than multiplied by 3.

#### Question 7

On the whole, this question was well answered. Some students did not read the question carefully enough and only used one of each item rather than four of each.

#### Question 8

It was rare to see an incorrect answer in part (a).

In part (b) most students gave the correct answer although some lost a mark by stating 0.4 rather than 4

#### Question 9

Having doubled 6.5 in part (c), a number of students then either added this to 6 or subtracted 6 from 13.

Parts (a) and (b) were well answered.

#### Question 10

Part (a) was well done.

Success was rather more varied in the second part of the question. Those who converted the numbers into decimals did not always give sufficient decimal places to be able to differentiate between them.

#### Question 11

$12x^2$ ,  $7x^2$  and  $12x$  were common incorrect answers in part (a).

Part (b) was answered more successfully with only a few incorrect answers seen.

In part (c), despite students having access to a calculator, the arithmetic of negative numbers was very poorly done. Many students failed to show correct substitution in (i), those that did then frequently got as far as  $-20-12$  but then gave the incorrect answer of 8. In (ii) many had difficulty multiplying negative numbers. When this was done successfully, solving the subsequent equation proved too demanding for many.

#### Question 12

Students did not always pay close enough attention to the scale used on both axes. 4.4 was a common incorrect answer to part (a).

In part (b), many students just offered an answer without showing any working. If this was within the allowable range then full marks could be awarded but if the answer lay outside the range then part marks could not be awarded unless a correct method was shown.

#### Question 13

Although 'obtuse' was the most common answer for part (a), 'acute and 'reflex' were also seen as was *XYN*.

#### Question 14

In part (b), a significant number of students thought that  $\frac{3}{4}$  of an hour equated to 75 minutes. A significant number multiplied 3.27 or 327 by the speed without changing the time to a decimal.

#### Question 15

Some gave the denominator of their fraction as 100 rather than 360. A common error in part (b) was to double rather than half all the angles.

#### Question 16

While many correct answers were seen, a significant number of students were unable to make any progress with this question.

#### Question 17

61 was a common incorrect answer in part (b). In part (c) some worked out the number of squares in the 88<sup>th</sup> pattern rather than found the pattern number with 88 squares.

#### Question 18

Part (b) was generally correct. In part (a), those who attempted to describe a rotation followed by a translation gained no marks. A significant number of students gave the direction of the rotation as 90° clockwise rather than anticlockwise.

#### Question 19

The two most common errors in this question were to either subtract the area of just one circle from the area of the rectangle or to use  $\pi \times 6^2$  rather than  $\pi \times 3^2$  as the area of the circle. Some used the formula for circumference rather than area.

#### Question 20

At this end of the paper, many students were unable to progress past finding the total number of drinks. However, the best work was well ordered showing logical sequential steps leading to the correct answer. Many students got confused part way through the question but were nevertheless able to gain some method marks.

#### Question 21

Part (a) was well answered.

The majority of answers in part (b) were also correct although some students used their answer from part (a) rather than 0.1

#### Question 22

Writing a number as the product of its prime factors was clearly well understood. A small number of students listed the factors rather than writing the number as a product of its prime factors and therefore lost the final mark.

#### Question 23

Of those who made a start to the question, a significant number of students formed incorrect equations. These usually came from thinking that opposite angles of a parallelogram sum to  $180^\circ$ . Students who displayed correct knowledge about angles of parallelograms generally went on to gain full marks. A significant proportion also equated  $x+24$  with  $x+2y$ , or thought that the three angles identified sum to 270.

#### Question 24

Part (a) was well answered by about half the students.

Students found part (b) more demanding. Whilst some correct answers were seen, there were a significant number who divided 0.75 by 1 and by 2 and by 3 and added all the results.

## Grade Boundaries

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

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

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