



Pearson
Edexcel

Examiners' Report
Principal Examiner Feedback

October 2020

Pearson Edexcel International Primary Lower
Secondary (iPLS)
Year 9 Mathematics (LMA11/01)

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General Comments

This year's paper presented a very similar level of difficulty to the previous series, and the performance across the whole range of candidates was relatively consistent with previous series. This was reflected in raw scores achieved, which were spread across the full mark range, and the grade boundaries, which were not significantly different to the previous year. Both Section A and Section B had a range of questions which differentiated between candidates of different abilities effectively.

The majority of questions were attempted by all candidates and only a small number of questions were missed out, particularly around the latter stages of Section B, as the questions were generally on harder topics and more difficult to understand. However, there were a few questions earlier in Section B which were attempted by fewer candidates too.

Work on shape, space and measures questions continued to be strong, although this area is still not as strong as algebra for most candidates. However, the questions on statistics and data handling proved to be the most challenging for the cohort overall so this could be an area for many centres to focus on ahead of future series.

Almost all candidates seem to have had access to a suitable calculator which allowed them to attempt many of the questions in an efficient, effective manner. The amount of working out shown has continued to increase when compared to previous series, which is pleasing as it helped many candidates to secure method marks where their answer was not entirely accurate. However, there are several who are still scoring no marks where their answer is not quite accurate enough (perhaps because of an error in truncation or rounding) due to a lack of working shown.

Inappropriate or overly severe rounding and truncation did cause a number of candidates to lose accuracy marks on a number of questions in Section B. Candidates must be aware of the impact that premature rounding has on the accuracy of a final answer and should give answers to at least three significant figures, where necessary. Some candidates may benefit from writing out the full answer from their calculator display before rounding or truncating, so accuracy can be assured even if rounding is excessive or incorrect.

Section A

There were 15 multiple choice questions in the first section of the paper, with one correct answer given alongside three incorrect distractors.

Section A provided little evidence of candidates' working out, as usual, which makes it difficult to know which correct answers were because of good fortune and which were down to correct methods.

On the whole, the questions towards the beginning of the section were done better than the later questions, although this is to be expected as the difficulty generally rises as the section goes on.

Ambiguous indications of the correct answers, such as circling or underlining answers, will not have been given credit in this series as Section A of each script was marked by OMR. Therefore, it is essential that all candidates indicate answers in the correct way. Almost all answers were expressed clearly though, with only a few occasions where a candidate selected more than one answer for an individual question (which meant that the mark was lost).

Section B

This section contained eighteen questions, nine of which had more than one part. Each question (or part) attracted one, two, three or four marks towards the total of 65 marks for this section. For questions that were worth more than one mark, marks were available to reward evidence of correct working. Further comments on each individual question can be found below.

Question 16

Part a was answered well on the whole, but quite a few candidates found the difference of the highest and lowest frequencies. However, very few gained full marks on Part b, as the vast majority worked out their answer from the midpoints of the grouped frequencies.

Question 17

Part a of this question was answered well mostly with a mixture of standard form and decimal numbers. In Part b, the vast majority arranged the numbers correctly with a few giving answers in order from largest to smallest. Others organised the digits of the numbers, ignoring any place value.

Question 18

A lot of good responses on this one. Most candidates knew how to find the area of rectangles and triangles, but many didn't realise that they needed to convert the units in the lengths so that base and height were of the same unit. Most that did convert units worked in cm (although a handful worked in mm or m) successfully and found the required areas and made a correct conclusion. and were still able to gain full marks if they did that. A common error was to calculate area for each shape using different units, and then try to convert the area units so they are comparable which was generally unsuccessful, or just compare the two numbers ignoring the units.

Question 19

The vast majority gave very good answers to part a, with hardly any incorrect. On part b, the majority worked out compound interest instead of simple interest and, as a result, a great many candidates only gained 1 mark.

Question 20

There were a mixture of answers in Part a with many candidates seemingly confused and giving a variety of algebra for both (i) and (i), gaining no marks. Part b was far more straight-forward and answered well by the majority. Part c was answered well on the whole, but quite a few incorrectly evaluated the first bracket and only gained 1 mark.

Question 21

Vectors seemed to be a topic that was unfamiliar to many candidates. Several had a go at part a but only described the transformation, thus gaining only 1 mark. Part b was again not answered well, with very few fully correct answers. Many gave the incorrect answer of ' $SF = 2$ ' or recognised it should be negative and hence only gained 1 mark.

Question 22

Part a was done very successfully by the majority of candidates. A few did make mistakes with positive and negative signs with '-21' seen at the end a number of times. There were a significant number who clearly did not know how to tackle such a question though. The occasional candidate thought they were being asked to solve an equation and gave $m = 3$ or $m = 7$ as their answer. Part b was also done well, but a smaller majority gained full marks. 1 mark was often awarded for a correct though not complete factorisation. Very few were unable to show evidence of at least some knowledge of what to do. The most common error was not taking out the highest common factor. Part c was tackled well on the whole, with the majority gaining full marks.

Question 23

There were lots of correct answers to Part a. Of those that didn't achieve full marks, many didn't seem to understand the question so cancelled the ratio to 5:12. The vast majority had no problem with part b, but an incorrect method could lead accidentally to two of the correct answers, so without working picked up 1 mark, but where the incorrect method was seen, no mark was awarded.

Question 24

Most candidates picked up a mark for correct units. However, many used a variety of incorrect methods so the question was not answered well. Some used all the dimensions given, others worked out surface area.

Question 25

Part a was another topic which didn't seem to be understood well. Very few knew which angle was required or thought to measure angles. Part b was answered much better though. The line was measured accurately and the scale applied well.

Question 26

A lot of very good responses were seen. A number were seen trying to draw the triangle without construction arcs, and this was generally not successful. A sharp pencil is an advantage as some candidates showed very heavy lines. Some candidates wrote sentences to explain that they didn't have compasses, so all candidates should be reminded to be fully equipped for the exam.

Question 27

Mixed success on this question; a good number of fully correct answers but just B1 was awarded regularly, particularly where students believed the points should be plotted at the ends of the intervals rather than at the mid-points. A significant joined the first point to the fourth to make a closed polygon, which was penalised, although lines connecting the first point to (0,0) and/or the fourth point to (40,0) were condoned.

Question 28

There were a significant number of good answers to part a, but a lot of candidates made errors on the first 2 terms so there appeared to be problems calculating with negative signs. Some responses clearly did not know how to do this kind of expression and '2, 3, 4, 5, 6, 7, 8' was seen several times. Most candidates were able to plot the coordinates that they had found, and many plotted with a smooth curve. Some did not join the points up and a number joined their points with straight lines instead of the curve that was required.

Question 29

There were a lot of correct approaches to this question and the use, appropriately, of the mean (rather than median or mode) was almost universal although a significant number divided both averages by 5, not recognising that Sprinter B had one time missing. Some tried to compensate for the different number of races by finding the average for only four of sprinter A's races so as to compare with B. The range was generally calculated well, but many candidates chose the first and last values for Sprinter A rather than the largest and smallest. In drawing a conclusion, it was concerning to see many candidates selecting the larger average as better therefore choosing Sprinter B. Those who gave an interpretation for the range values often correctly realised that the lower range value indicated greater consistency - by this measure alone it would be entirely appropriate to select sprinter B. Either decision is acceptable, given the available data. There were many very considered responses taking both mean and range into account in making a decision.

Question 30

Whist the vast majority of candidates seemed to understand the concept of exchange rates and how to convert the New York price to pounds or the London price to dollars. Working in dollars was seen much more often than working in pounds. The greatest problem was in reading the question carefully as a significant minority worked correctly but overlooked the requirement in the question to find the difference in value in either currency. Many stated that London was the cheapest with a price of \$79.91 but didn't gain the third mark because they didn't state the difference was \$0.09. Very occasionally, candidates confused the two currencies, for example giving the difference wrongly as £0.09 rather than \$0.09.

Question 31

There were many good responses on this, but it was disappointing that many candidates chose to draw and measure as the question specifically said 'calculate' and working was required. Most candidates had no idea that Pythagoras needed to be used here with the vast majority of candidates offering a response that yielded no marks (such as scale drawing or working with gradients). A few candidates knew that Pythagoras was involved but incorrectly found the length OC.

Question 32

The best candidates were able to work through this problem correctly with apparently little trouble. A lot of candidates appeared to not read the first sentence and just work out an algebraic expression for the area. Others understood that they had to find expressions for the perimeters and equate them but made errors in doing so. Some candidates just used the two sides given for the rectangle and failed to double them to find the perimeter. There were then those who saw the requirement for an area and immediately set about multiplying $(3x + 5)$ by $(x + 1)$, which prevented them from making any progress. A number of students correctly arrived at $x = 6$ but then proceeded to use their value to calculate the perimeter - they usually did this correctly but in doing so failed to answer the question and so lost the final mark. If a correct equation was set up, then the majority of candidates found the answer successfully.

Question 33

A fully correct solution eluded all but the best candidates, and very few candidates managed any marks on this item at all. It was expected that students would draw or visualise a tree diagram and show that the probability of drawing out any particular colour was first $\frac{2}{10}$ and then $\frac{1}{9}$. Those who showed these two fractions being multiplied scored the first 2 marks but then often failed to realise that their product must be multiplied by 5 to account for the five different colours available. Some candidates started well but thought that the problem involved replacement and either showed a method of $0.2 \times 0.2 \times 5$ or else used a sample space diagram. Those students who misinterpreted the question and thought that the first ball should be replaced before the second was drawn were credited with two marks if they showed a complete correct solution for this different problem.

