Examiners' Report

Summer 2015

Pearson Edexcel PLSC in Mathematics Year 9 (LMA01/01)

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PLSC Mathematics Year 9

Specification LMA01/01

General Report

This year's paper has once again proved to be a suitable challenge for the increased number of students who sat the test and the scores achieved were well spread across the full mark range. A large number of the questions in both sections differentiated very well between students.

The vast majority of students appear to have had access to an appropriate calculator and this seems to have helped them complete a number of questions very efficiently. However it is important to remember that evidence of working, even when calculators have been used, is essential because a number of students scored zero on two and three mark questions where their answer was only slightly incorrect.

Most students completed all of the questions on the paper. The few who didn't usually only missed out a small number of questions, often towards the end of the test. Questions on data handling or shape, space and measures seem to have presented more of a challenge to most students, while number and algebra questions were usually done very well.

Report on Section A

The first section of the paper contains 30 multiple choice questions, with four possible answers to choose from on each. The vast majority of students answered all of the questions and there were only a small number of cases where questions were left blank. However there was very little working out shown so it is difficult to tell how many answers were found from correct methods rather than good fortune.

As expected, earlier questions were generally done well and the later questions done less well. However there were some exceptions to this pattern with Questions 5, 7 and 11 often being incorrect and Questions 23, 25 and 30 often correct for a large number of students. There were a number of students who earned very high marks across the whole paper but who dropped marks due to errors on the earlier multiple choice questions.

Students generally expressed their answers clearly. There were very few who selected more than one answer for any individual question and hardly any answers that were circled, underlined or written down nearby. Whilst credit was given in this series for any unambiguous indication of the correct answer, Section A is likely to be marked using OMR in subsequent series so it is essential that all students realise the importance of recording answers to multiple choice questions in the correct manner.

Report on Section B

This section contained twelve questions, ten of which had more than one part. Each question attracted one, two or three marks towards the total of 50 marks for this section. For questions that were worth more than one mark credit was given for evidence of correct methods. Comments on each individual question can be found below.

Question 31

The majority of students got Part (a) correct and most also got full mark on Part (b). Of those who did not, some responded with highest to lowest but very few showed correct comparable forms so 1 mark was rarely awarded. Students would be well advised to show their working in this kind of question rather than relying solely on calculators. Part (c) was generally done well and even students who got it wrong usually tried to find a common denominator. Part (d) was done very well with thorough working shown in the vast majority of cases, which was pleasing to see.

Question 32

Most students got Part (a) correct but a significant number failed to reorder the numbers and a smaller proportion found the range or the mean. Part (b) was done less well though. A number used the highest value in each group so gained method marks. A sizeable minority didn't understand the significance of grouped data and thought they were dealing with 4 numbers, so most common incorrect method was 40 ÷ 4.

Question 33

Part (a) was well answered by most with only a small number who didn't seem to understand reflection. Part (b) was also done well although some students did not recognise the "equal" marks denoting an isosceles triangle. Some students showed ½ x 5 x 5 but made an error in the calculation and since only 1 mark was available no credit for method could be given. The majority got Part (c) correct and those who didn't generally left it completely blank. However Part (d) was not well as students had no strategy for calculating the sum of the angles of a polygon. Some tried to use 360 and seemed to ignore the inappropriateness of a negative answer.

Question 34

The great majority of students filled the table correctly in Part (a) and then proceeded to draw the correct line in Part (b). Those who did not get it correct tended to leave it completely blank, so there were very few incorrect answers given. Occasional mistakes in the table were usually followed by a method marked gained for plotting and joining points correctly.

Question 35

Part (a) was the least well-answered question on the whole paper and even some of the very best students failed to draw a suitable net. Common mistakes were to draw a cube (3D) or to use an incorrect number of squares. Part (b) was also done badly with many students finding the volume rather than surface area. Part (c) however was done well with only a small proportion failing to find the volume correctly. Most of those who failed to score 2 marks on Part (c) found the volume of a cube with edge 3cm but failed to divide by 2, so hardly any students scored 1 mark.

Question 36

Part (a) was correct for the vast majority of students with $8p - 5$ seen occasionally as a wrong answer. On Part (b) most students expanded successfully but then a significant number failed to deal with the negative term correctly which was necessary for the first mark. Among those who did continue correctly, the minus sign often vanished in the final answer. In Part (c) the inequality sign seemed unfamiliar to many and was ignored by some who gained only 1 mark for finding 8. In Part (d) many students recognised the difference of two squares and successfully found the correct answer. Of those who didn't, $x(x-7)$ was often seen as a wrong answer.

Question 37

Students who were familiar with stem and leaf diagrams usually scored full marks in Part (a), with only a few errors or omissions within the leaves, and a few failures to complete the key. However a significant proportion of students seemed to have no understanding of what was required, generally leaving the question blank and hence scoring no marks. Part (b) attracted many answers in the acceptable range, with a few just outside and the remainder giving either no answer or an answer a long way from being correct.

Question 38

Most students appeared to understand Part (a) and earned at least 1 mark for a correct method. Many went on to secure the second mark too, although some made arithmetic errors and some did not recognise which part of the ratio was required as the answer. Part (b) was answered very well, even by some students who had failed to answer Part (a) correctly. Some seemed comfortable with a unitary method, many were able to move straight to a correct calculation but some just left the entire question blank.

Question 39

Students seemed well prepared on how to deal with this type of question. In Part (a) expanding the brackets was commonly seen but this was often not done correctly and, even when it was, it was not always followed by a correct rearrangement. Those who opted to divide by 3 first were more often completely successful. In Part (b) two common methods were seen frequently (using a multiplying factor then adding or subtracting, and use of a substitution approach). Some made errors on the way but there were many fully correct solutions. A minority appeared to have encountered the strategies for solving such a pair of equations but without any real understanding of what to do.

Question 40

Several students were able to recognise that Pythagoras' Theorem was required to solve Part (a) although a minority were unable to apply it properly, often adding the squared terms instead of subtracting. Those who failed to recognise what was required in the question generally left it blank. Only a few students were able to recognise that they should use trigonometry in Part (b) though. Of those who did, the majority identified the correct trigonometric ratio and went on to find a correct answer. However, in some cases, values were rounded or truncated in such an extreme way that their answer fell outside the acceptable range. Again, there were a number of students who left this question blank although there were some who achieved well on this question despite performing relatively badly on the paper overall.

Question 41

There were many correct answers to this question and students seemed happy to work with numbers in standard form. Calculators that deal effectively with standard form obviously help considerably with this type of question.

Question 42

The final question was done correctly by the vast majority of students who clearly understood the concept of probabilities adding to 1.

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