

Examiners' Report

Summer 2014

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

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PLSC Mathematics Year 9

Specification LMA01/01

General Report

This paper provided an appropriate level of challenge to the increasingly large and varied range of students who took it and the marks scored were very well spread.

All students seem to have had access to a calculator and this appears to have helped them complete a number of questions efficiently. However some should be reminded that it is important to show evidence of working, even when calculators have been used, as a number of students failed to score any marks on two and three mark questions where their answer was not quite correct.

The vast majority of students completed all questions.

Report on Section A

This section contained 30 multiple choice questions, each having four possible answers to choose from.

Students expressed their answers clearly. There were very few who selected more than one answer for any individual question and hardly any answers were circled, underlined or written down nearby. Whilst credit was given for unambiguous, alternative methods of indicating the correct answer during this series, Section A is likely to be marked using OMR in subsequent years so it is important that students understand the importance of recording answers to multiple choice question correctly.

Report on Section B

This section contained 17 questions, some 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.

Question 31

The majority of students got this question correct and most of those who did so showed very brief evidence of working out. In the few cases where an incorrect answer was given it was often 3.75 because students had subtracted 3 from 18 sides rather than adding. Answers were generally given as a decimal although some students used improper fractions or mixed numbers, which were perfectly acceptable.

Question 32

Again the majority of students performed well on this question, and this was one of the questions where good working out was shown too. Some students confused area with perimeter before correctly finding the perimeter of the shape but this did not attract any marks. Most of the students who scored full marks did so using a method that involved adding 32 to 12 although there were a range of less common yet equally acceptable methods used.

Question 33

Q33(a) was done well with most students scoring both marks for a correct answer, although a large proportion expressed their answer in the form $3 + 4(n - 1)$ which earned full credit.

Q33(b) was done very well although only a small number of students seem to have used their answer to Q33(a) when calculating their answer. A number of those who got Q33(a) wrong went on to earn the mark in Q33(b), often by writing out all of the first 20 terms of the sequence to find their answer.

Question 34

Almost all students got this question completely correct, usually without any evidence of working out. The few students who did not earn this mark often failed to attempt the question at all.

Question 35

Although this question attracted a good amount of visible working, and most students got the answer correct, there was also a good proportion that scored two, one or even no marks. Some students earned one mark, either for collecting like terms correctly or for showing an intention to add the angles and then equating to 180. Where marks were lost it was usually due to errors involving the negative number, although some students also equated their expression to a number other than 180 (often 360). Almost all students who scored both method marks went on to earn all three of the marks available.

Question 36

There was a variety of different incorrect answers for Q36(a) although 6^7 was the most common.

Almost all students got Q36(b) correct but those who did not usually calculated the correct value for the expression, rather than simplifying it as required.

Most students got Q36(c) fully correct although there was a number of students who gave their answer as a decimal, which suggests the use of a calculator. Those who did not use a calculator sometimes left their denominator as 4^2 so only earned one mark.

Question 37

Almost all students got Q37(a) completely correct and there were no common incorrect answers from those who did not secure this mark.

Q37(b) was done correctly by most students although several who lost the mark did so because they gave an answer of $8x^2 - 24$ and missed the final X off.

The vast majority of students also got Q37(c) correct. Many gave their answer in the form $y + 4 = x$ but this was perfectly acceptable.

Question 38

Although the majority of students gained full marks on this question there was a significant proportion who earned no credit, and very few who got only one or two marks. Where errors were made it was often due to arithmetic errors even though students could have used calculators to check their working. Some students found angle EDB correctly by subtracting from 180 but then tried to find BED by subtracting from 180 as well (rather than 90).

Question 39

Q39(a) was found to be challenging. A small number who seemed to appreciate what modal means gave 6 as their answer (the frequency of the modal class) but this did not earn any credit.

Relatively few students earned marks on Q39(b) although those who did often went on to attract full credit. The most common error was to add all frequencies together before dividing by the number of groups to get an answer of 4. However there was a range of other incorrect methods used too; very few students showed any intention to use the midpoint of each group.

Question 40

Q40(a) and Q40(b) were generally done well and most students seemed able to attempt this question without the use of their calculator. Unfortunately though this sometimes led to the power in Q40(a) or the number of zeros in Q40(b) being one away from the correct value.

Q40(c) proved to be more challenging and, whilst the majority got it completely correct, there were a number who only gained partial credit for correct use of incorrect answers from Q40(a) or Q40(b); this did not give them the chance to earn both marks on offer though. 12×10^2 and 1200 were both common answers which only earned one mark and there were again a number of students whose power was one away from being correct.

Question 41

Several students found surface area which, despite including the correct area of the triangular cross-section, earned no marks. Some students found the sum of the perimeter of each face; others simply added or multiplied all of the values given. A few students even showed calculations involving π or tried to use Pythagoras in their working. Those who attracted some marks generally went on to earn all three that were on offer, while those who did not usually made arithmetic errors.

Question 42

The majority of students earned full marks on this question for a correct answer, often without any working. In some cases though a correct answer did not earn full marks because it had clearly followed from incorrect working (usually adding the given cards to get 25 and then dividing by the number of cards). Those students who earned one mark generally went on to get the second as well, although some showed a complete correct method before selecting the wrong value from their working as the answer, often writing 6 on the answer line.

Question 43

A high number of students scored no marks on Q43(a) because they calculated an answer to the given expression (which earned no credit) and often went on to round their answer to 1sf (which also earned no credit). Those students who followed the instructions given in the question almost always scored some marks for correctly rounding at least two values to 1sf but many lost the final mark because they rounded 242 to 240 (rather than 200 as required).

Q43(b) was demanding for the majority of students who either did not think that a trailing zero was necessary as the second significant figure or who rounded to two decimal places instead

Question 44

This question was answered very successfully by almost all students. A very small minority got Q44(b) correct due to the accepted 'follow through' from an incorrect Q44(a). This was often $\frac{11}{14}$ because students had added numerators and denominators in Q44(a) then subtracted $\frac{3}{14}$ from 1 in Q44(b).

Question 45

Those students who recognised the need to use Pythagoras' Theorem usually scored all three marks. Students scoring partial credit were rare although a small minority squared the sides correctly but went on to subtract their answers, rather than adding. A few students attempted a solution using trigonometry but, of these, most thought that the diagonal bisected the right angle and earned no credit.

Question 46

Most students scored two marks on Q46(a) often for a correct answer without any working out recorded.

Q46(b) was found to be much more challenging as, whilst good number of students were able to identify the two fractions to be combined, only a small proportion understood that they were to be multiplied (not added) and fewer still were able to carry out the multiplication correctly.

Question 47

Whilst the majority of students attempted this question only around half of them earned any marks and incorrect answers often appeared without any working. Students who earned some credit generally went on to score full marks, although a few did manage to earn one mark in Q46(a) before getting Q46(b) wrong.

Students did not get Q46(b) correct having made an error on Q46(a) although there were a very small number who left Q46(a) blank before getting Q46(b) correct.

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>

