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Examiners' Report

Summer 2016

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

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PLSC Secondary Mathematics Year 9

Specification LMA0/01

General Introduction

This summer's paper has provided an appropriate challenge for the vast majority of students who sat the test and this is reflected in the range of scores achieved, which were spread across the full mark range. A high proportion of the questions in each section of the paper differentiated well between students of varying ability.

Shape, space and measures questions presented the most significant challenge to students overall, although algebra questions were completed very successfully in general.

It was pleasing to see an increase in the amount of working out being shown, even when calculators have been used.

Section A of the paper has 30 multiple choice questions. There is a choice of four answers for each question and the vast majority of students attempted all of the questions.

Answers were almost always expressed clearly and there were very few examples where students had selected more than one answer for any individual question. Whilst credit was given in this series for any unambiguous indication of the correct answer, circling or underlining answers would not be recognised if scripts were marked by OMR in subsequent series. It is therefore essential that all students continue to record answers to multiple choice questions in the correct manner and realise the importance of doing so.

Section B contained seventeen 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.

Report on Individual Questions

Question 31

Most students correctly expanded to get $15f + 35$ in Q31(a) although some then lost the mark by over-simplifying their answer, usually getting $50f$. Q31(b) was less done less accurately and, where errors were made, it was often as a result of subtracting 7 from 28 as a first step before dividing by 4. Q31(c) was fairly well completed, with more able students expanding and simplifying correctly, quite often stating $-1x$ (which was acceptable). However $-7x$ was also often stated (which was not acceptable) although this was usually after earning 1 mark for correct expansion.

Question 32

The vast majority of students got both parts of this question correct. Those who did not get full marks generally got both parts wrong for writing (3, 2) and then plotting (0, 4).

Question 33

Q33(a) was done well, although very few students showed any working to support their correct answers. In Q33(b) those who did not earn full credit usually scored no marks as very few made arithmetic errors and almost all students used the correct midpoints and divided by the correct number.

Question 34

This question differentiated between students of varying abilities very effectively and there were a wider variety of methods used. The majority of students completed Q34(a) well although a small number were not able to access the question and a few made arithmetic errors which meant they only scored 1 mark. Q34(b) was completed effectively and the majority of students scored at least 1 mark, with most going on to score the second mark too. Some students left their answer in index notation, which was acceptable. Although a small number of students were confused between HCF and LCM. Very few scored 1 mark as most who were able to attempt the question did so accurately and correctly.

Question 35

Most students reflected the shape correctly and where errors were made it was often for reflecting through an incorrect mirror line (usually mirrored against the far-right vertices). However there were a number of students whose answer stopped at the mirror line, so no part of the reflection was on the left hand side.

Question 36

Most students comfortably completed Q36(a) although a good proportion came up with the answer of 54 by adding the two areas rather than subtracting. In Q36(b) only about half of students gained full marks as several lost one of the two for missing or incorrect units. Others failed to set up the correct equation $h \times 5 \times 8 = 28$ and thus did not get the answer.

Question 37

This question was done very well by the vast majority of students. There were only occasional arithmetic errors on Q37(a) and Q37(b). There were no particularly common incorrect answers to Q37(c).

Question 38

Almost all students attempted this question but only around half got it fully correct. The majority of others scored no marks as very few scored 1 mark. The most common error was to do 40 divided by 360 then multiplied by 400 which scored no marks.

Question 39

Q39(a) and Q39(b) were answered correctly by a large number of students but relatively few scored full marks for the entire question. On Q39(c) several students got the first mark for 2/5 and 2/4 (or equivalent) but very few went on to complete the diagram correctly. Some left one or both of the answer lines blank while those who did attempt to complete their diagram often just copied the values from above rather than calculating their own answer.

Question 40

This question was not attempted by a number of students and many of those who did were unsuccessful. There were a selection of common incorrect answers, including 72, 108 and 180, but also range of other incorrect answers were also seen. Very little working out was shown but, where it was, there seemed to be some confusion between interior and exterior angles.

Question 41

A large majority of students scored full marks on this question and there were no particularly common wrong answers seen. This was one of several examples of students' strong algebraic skills. Any errors were generally due to minor arithmetic errors.

Question 42

This question differentiated between students of varying abilities very effectively and there were a good spread of students earning 0, 1, 2 and 3 marks. Most students tried to use an elimination method while a smaller proportion used a substitution method, although the majority of them struggled to earn more than 1 mark. The most common errors were in the application of directed numbers and several students appeared confused as to whether they were adding or subtracting final equations. Most students who found one variable went on to find the other successfully.

Question 43

Around half of the students scored 2 marks on this question for getting it fully correct, although hardly any working out was shown in this question. The vast majority of others scored no marks for using simple interest (leading to an answer of 216). There were very few students who scored 1 mark out of 2.

Question 44

Despite having access to calculators, a large proportion of students failed to score full marks on this question. Q44(a) was completed relatively well although a small number of students missed the negative sign on their power. Q44(b) was answered well with only a small number of students having the number of zeros wrong. However in Q44(c) many students struggled to express their answer correctly in standard form. Answers such as 10350 were often seen and earned 1 mark.

Question 45

This question was found to be challenging. Very few students scored full marks and even those who did usually failed to show correct working to accompany their answer. Hardly any students scored 1 mark. The most common errors for those who scored no marks included failing to recognise there were 5 faces (often missing the bottom or slope) and using an incorrect method to find the area of a triangle (often using 3×4).

Question 46

Around half of the students were able to complete this question, with most of those who did scoring full marks. Of those who used Pythagoras' Theorem the majority did so correctly with only a minority making arithmetic errors or incorrectly adding the squares of the given sides. However very few students showed all of their working or presented their method in full.

Question 47

There were a range of common errors which prevented students from scoring any marks, which included finding circumference of the circle instead of area or finding one-quarter or one-sixth of the area of the circle. For students who earned the first mark, rounding or truncating decimal values too much or too early was the most common error that prevented them from earning the second mark. Some students expressed their answer in terms of pi (which was acceptable).

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