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Examiners' Report/

Summer 2016

Pearson Edexcel Level 3 in
Mathematics in Context (7MC0/01)

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Mathematics In Context Paper 1: Comprehension Specification (7MC0/01)

General Introduction

This is the first time this qualification has been set.
The paper was accessible to all students, with all questions attempted by a good proportion of students.

Reports on Individual Questions

Question 1

Q01(b) was better answered than Q01(a). This is unusual as Q01(b) technically builds on Q01 (a) and required the use of the formula formed in Q01 (a). This indicates that students were more comfortable problem solving with numbers rather than generalising with algebra.

Question 2

This required reading information from a graph in the source document for a particular age group. Many students were able to do this and wrote down sensible comparative statements. The most common error was to use the incorrect age group. Only a comparison was requested but some students went on to give possible reasons for their findings, these reasons did not affect the mark awarded.

Question 3

A good number of fully correct answers were seen. However the question requested the use of percentage increase to support the students' conclusion. Some students ignored this request and just stated numbers around the lengths rather than percentages. This was not acceptable. There was some evidence of an inability to calculate percentage increase and centres should ensure that this is a skill students have prior to sitting this qualification.

Question 4

For this question many part answers were seen. At the basic level some failed to use a linear scale when drawing the graph of the model or plotting the scatter diagram. This is a skill which anyone sitting this level 3 qualification must have. There was a distinct lack of comparison between the real data and the model suggested. An open question like this is part of the assessment requirements of this qualification. It is important that students are encouraged to clearly label the work they produce and if comparing models that they show working as to how they used the model or models provided. More working out would have led to more marks being gained.
The interpretation at the end of the question was given to a reasonable standard if the student knew to refer to both the actual data and the data produced by the model.
A few graphs with the years plotted along the y axis were seen and this indicates that students should take extra care to read the question fully. x was clearly defined in this question.

Question 5

The students were often able to plot the box plot appropriately. There was a need to refer to the data source and re order the data.
Some students did find it difficult to find the lower quartile, the upper quartile and the inter quartile range.

Many students were able to show there were no outliers in this data. The main issue here was using incorrect figures or adding to the interquartile range rather than the upper quartile ie not using the given rule correctly.
Some students did not state the value of the quartiles and so when follow through marks were allowed this could not be awarded as there was little working to follow.
Students should be encouraged to show working in the answer booklet and not in the source booklet.

Comparisons were given in Q05 (b) but not always with one in the context of the question so often only 1 mark was awarded.

Question 6

This question was answered differently by students. Some calculated the Spearman Rank correlation coefficient, others the product moment correlation coefficient, either were acceptable. The ranking included equal ranks which were ignored by some students. The use of a rank of eg 1.5 is an expectation of this specification. Once ranking was achieved the ability to find the difference and square was usually well communicated. The total was also found. This was then used effectively in the required formula.

For the pmcc, many students performed calculations on their calculators, and wrote down few steps in their working. The use of calculators is acceptable but this is a high risk strategy if any entry is incorrect. Students should be encouraged to show all working and check their final answer in this one step approach.

The interpretation of the final answer was sometimes missed out.

Question 7

This question was found to be more challenging when compared to other questions in section B. The requirement to extract information from a graph in the source document, manipulate it and then compare proportions seemed difficult for some of the students. Some were able to give totals but then failed to convert to proportions. When proportions were correctly calculated the standard of the interpretation was high. Thus indicating that, students who fully answered this question were able to combine the skills of comprehension, calculation and interpretation.

Question 8

Initially an appreciation of the advantages and disadvantages of sampling was required. A variety of answers were seen, some were very good but others were confused or too general in their content.

Q08 (b) required substitution into spreadsheet formula, which was usually well done. The assumptions were less well answered. Many wrote about the difference between their answer and the figure in the spreadsheet rather than the assumption behind the formula proposed.

Question 9

The main error seen here was for $\left(\sum x\right)^2$ used instead of $\sum x^2$ even though the figure for $\sum x^2$ was given. Sometimes the mean was not given but the standard deviation was then correctly worked out.
The other main error seen was not knowing the value of n. This required reference back to the source booklet and counting the number of data points.
The comparison was reasonably well answered, although not always in context.

Question 10

Different parts of this question were achieved to different levels.
In Q10 (a) the values of x and y were given but still some students plotted the graph the 'wrong' way round. The data required was referenced as source G.
In Q10 (b) few clear answers were given. Students were confused about the role of each variable.
Q10 (c) (i) was well answered. Both the substitution and interpretation were accessible to most students.
However Q10 (c) (ii) was not so well answered, an interpretation of the gradient was required but a common incorrect answer was to discuss the strength of the correlation instead.
Q10 (d) required the correct use of formulae given in the booklet and then interpretation. Many students did not begin this question, of those that did, some did not know what the value of n was, reference to the source booklet gives this value.
For Q10 (e) a further interpretation was required. This was well answered by those students who had calculated the pmcc.