KEY SKILLS APPLICATION OF NUMBER (JUNE SERIES) 2005

Chief Examiner's Report

Level 1 and Level 2

These papers were provided with preset pass marks so no statistics on candidate performance in individual questions is available.

Level 3

It was agreed by Chief Examiners of the Awarding Bodies that this paper was too demanding for most candidates at Level 3. The marks obtained by candidates were consequently low. Almost all students found this paper lengthy and many had difficulty in coping with the complexity of the information contained in some questions.

The CCEA entry for this paper was very small. It is impossible to identify general patterns from such a small entry other than those already mentioned in the first paragraph. While accepting the overall difficulty of the paper, one must again stress the need for centres to train candidates in interpreting complex information and in choice of method. Also, reinforce to candidates that they should work quickly through the paper to gain maximum marks from topics where they are most able. They can then revisit the other questions. In many papers, for example, candidates who are well prepared in Statistics will find familiar topics in Section B. Perhaps in this paper they might have recognised trigonometry or simultaneous equations near the end?

Candidates should be advised to retain accuracy throughout a calculation and to choose suitable accuracy for the answer. They should also be aware that in some contexts the correct intermediate accuracy will require rounding up or down or off.

Q.1 (a) With a calculator, the calculations here are straightforward. It seems that the problems stem from an inability to extract and use the relevant data. The use of the data involves use of simple proportion; this topic remains a problem for too many candidates.

(b) Almost none of this group recognised 'Percentage backwards' and the need to divide by the factor 1.205.

Q.2 (a) Candidates struggled to interpret the information and be in control of the necessary steps to the final answer.

(b) In this part (as elsewhere in the paper) the 'control' of the steps includes the correct use of units and conversion between units. For example, some candidates lose track of whether they are working in pence or pounds.

Q.3 (a) Finding the mean from the grouped frequency table should provide straightforward access to full marks. Candidates were given some latitude in the value used for the mid-interval value in the first group.

(b) This should be simple at Level 3.

(c) Most candidates made a correct comment based on their answer to (b).

(d) My usual comment – use a factor for repeated percentage change.

Q.4 While 1690 is familiar to many of us in Northern Ireland, it is not the approximation for the number of metres in a mile. This was pointed out to QCA, but they did not change this information before issuing the paper. Candidates were given full marks for using the given value or also if they realised that the approximation should be 1609.

(a) A simple conversion of units.

(b) & (d) These substitutions also required candidates to rearrange the equation to find a solution. Centres are reminded that 'rearrangement' is in Level 3 standards.

(c) As they struggled with the equation, so many candidates struggled with the estimation.

Q.5 This was another question raising the topics of proportion, handling units and accuracy from complex information.

Q.6 Within the candidate entry seen, it appeared that many had either tired by this stage, or were trying to rush through the final question in the limited time they had remaining. Hence good responses to this question were few, with many unable to complete the paper.

(a) & (b) Proportion and units again caused many errors.

(c) In one sense this is simple arithmetic using a calculator; however, many candidates are disturbed by having to use realistic 'big' numbers.

(d) Very few candidates set up or solved the equation.

(e) & (f) This graph (like the rest of the paper) was time-consuming in choosing suitable scales and plotting the values from the table. Candidates often ignored details like title, labels and units. Providing a simple interpretation caused fewer problems.

(g), (h) & (i) Sadly, few candidates reached the simultaneous equations. The few who attempted them were often successful.

(j) Some candidates who found their way to this trigonometry question were successful.

(k) A long part question involving trigonometry or Pythagoras, volume of a prism and then a costing. However it would be a good example to give to students as a practice question as it illustrates the need to be competent in more than one topic to complete a question at Level 3.