Version : 1.0 0609

General Certificate of Education

Mathematics 6360

MD01 Decision 1

Report on the Examination

2009 examination - June series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334).
Registered address: AQA, Devas Street, Manchester M15 6EX *Dr Michael Cresswell Director General.*

General

On this paper, candidates found it much harder to score more than 60 marks than in previous series. This seems to have been due to question 6. Most candidates were again quite able and adequately prepared for the examination. The general standard of presentation maintained the improvement that was noted in January. Again some scripts were very well presented and the vast majority were adequate in this respect with very few scripts unacceptably untidy.

Question 1

Apart from the occasional slip, part (a) was almost always correct. Similarly, in part (b), the majority of candidates scored full marks. The only exceptions appeared to be from a minority of candidates who showed both paths on one diagram, usually unlabelled apart from 'squiggles' or with two sets of indistinguishable numbers, or from candidates with otherwise acceptable answers but either forgot to give the final matching or presented it solely in a diagram. It is essential that candidates show their alternating path as a list and then write down their final matching.

Question 2

There were many correct answers, showing that candidates had a good understanding of the topic. The most common error was to give 1, 2, 3, 4, 5, 6 as the numbers of comparisons. There was also a significant minority who appeared doubtful as to what a pass, or at least the first pass, actually is – correct figures were often given with a spurious additional row in front of them.

Question 3

Part (a)(i) was almost always correct; likewise for part (a)(ii), although a number of candidates gave their answers as 11 and $n + 1$. Part (b) was usually correct, apart from the occasional slip with the 8th edge. Very few candidates failed to make clear their method at all. They were probably equal in number to those clearly using another method.

Question 4

Overall this question discriminated well. Part (a) showed probably the most improved performance on a topic on the paper. Almost all candidates appeared to be well-drilled in the method and set their answers out well. However, very few candidates correctly obtained the length of *CF* as 520; it was almost always given as 530. In part (b), most candidates scored 4, 5, 6 or 7 marks. It was pleasing to note the number of candidates who were able to make their method for finding the route clear, by adding a suffix of the previous vertex onto their numerical values at each vertex. There were a number of candidates who 'forgot' to include *C* in their route.

Question 5

This work was well known, continuing the improvement from previous series. The weakest candidates often failed to complete tours. There were very few answers presented in matrix form – a considerable proportion of these failed to provide indication of order. In part (a), a surprising number of candidates omitted to give an example, opting to give a general description or definition of a tour. Part (b)(i) was usually correct. In part (b)(ii), as with similar past questions, there was a majority view that the current figure *can* be improved rather than *might* be. Some still failed to pick up the 'tour' mark. There were many correct responses to part (c) of the question.

Question 6

Many candidates demonstrated a considerable lack of algebraic ability in this question, whereas more able candidates coped well with much of parts (a), (b)(i) and (b)(ii). However, their almost

total failure to cope with the rest of the question was a great disappointment. In part (a), the first three inequalities were found and simplified by almost all the more able candidates; the 'average' candidate usually found the inequalities but neglected to simplify them; but very few candidates at all got anywhere near the fourth inequality. The most common inequalities were often devoid of x, y and z, and some were sometimes randomly combined. A few had the correct idea, but had the signs the wrong way round. In part (b)(i), only a minority offered any answers, and of these, only some presented their work clearly enough to earn any marks. Despite this, part (b)(ii) was comparatively encouraging, apart from drawing of the line $y = x$: many thought that this was drawn simply by joining (0, 0) to (40, 60). Many candidates also failed to label their feasible region. The majority of candidates omitted parts (b)(iii) and (b)(iv). Those who did offer answers seemed to ignore the implications of $x = z$. Most of the final answers never involved z and virtually no candidates made any attempt to relate their answers to the context.

Question 7

This question discriminated well. Despite the comparative ease of marking the short, sharp answers, it didn't appear that weak candidates could 'guess' their way to a reasonable mark. In part (a), full marks were very rare – the preserve of the generally most able candidates. Correct answers to parts (a)(ii) and (a)(iii) were often interchanged. Correct answers were also very rare in part (b). Many knew the node property required in part (b)(i) but failed to convert this into an acceptable statement about n. '4' was a more popular answer to part (b)(ii) than the correct answer. Average and weak candidates often provided answers consisting of ever more complicated algebraic expressions.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.