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# A-LEVEL MATHEMATICS

MD02 Decision 2  
Report on the Examination

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6360  
June 2016

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## General

Almost all students were able to attempt all the questions. Students were well prepared for the paper and there were many excellent scripts. There continued to be a decline in the presentation of work by a significant number of students. Students should recognise that credit cannot be given for illegible work and clear presentation is particularly important on this unit.

Even many good students lost some marks on the paper due to careless arithmetic and poor interpretation of results.

### Question 1

Parts **(a)** and **(b)** were well answered.

**(c)** The majority of students scored 3 marks, but a number of students drew a Gantt diagram instead of a resource histogram.

**(d)** This part proved to be challenging for all students and there were only a few correct answers. Students were expected to use the resource histogram and realise that activities  $B$  and  $F$  needed to be re-allocated. The popular incorrect answer was to have one worker completing the critical activities and all other activities completed by the second worker.

### Question 2

Students were given the option of initial row or column reduction. Students who started the question correctly, in general, scored the majority of the marks, but there were careless arithmetic mistakes. Some students spoiled an otherwise correct solution by failing to justify the optimality of their solution. Although many students gave the four possible allocations, a significant number only gave two allocations.

### Question 3

**(a)** This part well answered by the majority of students.

**(b)(i)** Students usually gained the mark for identifying the correct pivot, but a significant number of students failed to justify their answer.

**(ii)** Students are well versed in row reduction, although a significant number of students made careless arithmetic mistakes.

**(iii)** Students must justify the pivot that they are choosing if full marks are to be available. Again there were many careless numerical slips.

**(c)** This part required students to interpret their results. This included the realisation that an optimum solution had been found.

### Question 4

Although there were many very good complete solutions, this question did differentiate between the more able and the less able students.

**(a)** This part proved to be a challenge for the majority of students. Completely correct statements were rarely seen.

**(b)** The part was well answered. The most common mistake was that students failed to state the play safe strategies but merely circled two values and expected examiners to interpret their work.

**(c)** The majority of students scored high marks on this question. A common error was the use of a poor diagram in establishing the optimum 'maximum' point.

**(d)** This part showed a marked improvement in the standard of pupil's work. Students must be aware that their final conclusions must relate to the context of the problem.

### Question 5

**(a)** This was the first time that a question of this type and complexity had been set, yet overall this part was very well answered by the majority of the students.

Some students found minima values and some other students made careless arithmetic errors. Many correct solutions were spoiled by students failing to state their order.

**(b)** Although the majority of students scored the mark a significant number failed to give the answer in context.

### Question 6

**(a)** Most students gave the correct cut as 45 but a significant number were then unable to relate this to a correct inequality for the maximum flow.

**(b)** Virtually all students scored full marks for this part.

**(c)** The responses to this part were better than to similar questions in previous years. Students were, in general, able to set up the original diagram showing flows and potential flows in the correct directions. Some students failed to use the initial flow and set up a completely incorrect diagram.

Students who scored the majority of marks in part **(i)** normally scored full marks in part **(ii)**. There were many correct answers to the final part of the questions.

## Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.

## Converting Marks into UMS marks

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.

[UMS conversion calculator](#)