

A-level **MATHEMATICS**

Unit Decision 2
Report on the Examination

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General

Almost all students were able to attempt all the questions.

Although students were well prepared for the algorithms, the responses to interpretations of results were not of the same standard.

In a significant number of cases, the presentation of work was poor. Students should recognise that marks may be lost if their work is illegible, which is a particular risk on this unit, given the nature of the annotations required on some diagrams.

Even the best students lost some marks on the paper due to basic arithmetic errors and poor interpretation of the results obtained.

Question 1

This question was well answered.

In part (a), the majority of students scored both marks, but there were quite a few who failed to add an extra column, or to subtract the values in order to enable the algorithm to maximise.

In part (b), although many students scored full marks, a significant number failed to indicate that an optimal solution had been found.

Question 2

Students found both parts of (a) challenging, and full marks were rarely seen.

In part (b), many students believed that they had found the maximum flow. Very few students were able to give a complete answer in context.

Part (c) was well answered by the majority of students. The common error was students' not using the original given flow.

Question 3

Part (a) was well answered by the majority of students. The common error was the lack of a scale on both vertical axes.

The answers to part (b) were a great improvement on similar questions in the past, with many students gaining full marks.

Question 4

This question was well answered by the majority of students. Some students tried to minimise the total time.

Question 5

Although there were many very good complete solutions, the question discriminated well and lots of weaker responses were also seen.

In part (a), most students scored the mark. The common error was to include $a = 0$ in their answer.

In part (b), some students lost a mark by failing to simplify their inequality.

In part (c)(i), the majority of students scored full marks, but completely correct solutions to part (c)(ii) were rarely seen. Although students seemed to understand the demands of part (c)(ii), very few were able to correctly handle the inequalities from the previous parts of the question.

Question 6

Parts (a) and (b) were well answered by the majority of students.

In part (c), the typical errors in drawing Gantt diagrams, as highlighted in previous examiners reports, were again in evidence.

Part (d) proved to be a good discriminator. There were some excellent solutions, but the common mistake was for students to reduce all activities to their minimum time without considering whether this impacted on the critical path.

Question 7

Part (a) was well answered by the majority of students. The common error was to include an extra saddle point.

Part (b) was poorly answered. It was clear that many students did not understand dominance, with many starting their solution with Z dominates Y.

Mark Ranges and Award of Grades

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

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

UMS conversion calculator www.aqa.org.uk/umsconversion