MATHEMATICS

Exam board: Cambridge International Education

Assessment Method: 100% examination. All the exams are written and externally assessed.
Two year A level: Papers 1 and 4 are sat in May of Year 1. Papers 3 and 5 are sat in May of Year 2.
One year intensive course: Papers 1, 3, 4 and 5 are all sat in May.

Length of exams:
Paper 1 - Pure mathematics 1 - 1 hour 50 minutes
Paper 3 - Pure mathematics 3 - 1 hour 50 minutes
Paper 4 - Mechanics - 1 hour and 15 minutes
Paper 5 - Probability and Statistics 1 - 1 hour and 15 minutes

Breakdown of units

Pure Mathematics 1 - paper 1
Topic 1 - quadratics
Topic 2 - functions
Topic 3 - coordinate geometry
Topic 4 - circular measure
Topic 5 - trigonometry
Topic 6 - series
Topic 7 - differentiation
Topic 8 - integration

Pure Mathematics 3 - paper 3
Topic 1 - algebra
Topic 2 - logarithmic and exponential functions
Topic 3 - trigonometry
Topic 4 - differentiation
Topic 5 - integration
Topic 6 - numerical solution of equations
Topic 7 - vectors
Topic 8 - differential equations
Topic 9 - complex numbers

Mechanics - paper 4
Topic 1 - forces and equilibrium
Topic 2 - kinematics of motion in a straight line
Topic 3 - momentum
Topic 4 - Newton's laws of motion
Topic 5 - energy, work and power

Probability and Statistics 1 - paper 5
Topic 1 - representation of data
Topic 2 - permutations and combinations
Topic 3 - probability
Topic 4 - discrete random variables
Topic 5 - the normal distribution

Assessment overview:
Paper 1 - Pure mathematics 1 is 75 marks. It contains 10 to 12 structured questions based on the Pure Mathematics 1 subject content. It is worth 30% of the A level.

Paper 3 - Pure mathematics 3 is 75 marks. It contains 9 to 11 structured questions based on the Pure Mathematics 3 subject content. It is worth 30% of the A level.

Paper 4 - Mechanics is 50 marks. It contains 6 to 8 structured questions based on the Mechanics subject content. It is worth 20% of the A level.

Paper 5 - Probability and Statistics 1 is 50 marks. It contains 6 to 8 structured questions based on the Probability and Statistics 1 subject content. It is worth 20% of the A level.

Calculators can be used in all assessments.

Overlap with other subjects
A level mathematics is generally regarded as a hard subject to study and a good solid knowledge and understanding of mathematics at GCSE level is essential. Studying mathematics at A-level requires a lot of additional work from the student. Mathematics is fundamentally problem solving and representing systems and models in different ways. It is also communication and mathematical modelling. For this reason it is well respected by universities and employers due to the transferable skills the student requires to be able to undertake this subject. Having a firm grasp at mathematics will serve many subjects well at A level or degree level. It will certainly help with physics, chemistry, biology, economics and accounting and as a result of this a lot of students who take mathematics also study these subjects.

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