



Mathematics & Further Mathematics

Exam Board: Edexcel

A Level

Advanced Subsidiary GCE in Mathematics (AS Level Mathematics)

Advanced Subsidiary GCE in Mathematics
(AS Level Mathematics)

Preferred entry requirements:
Grade 6 or above at GCSE Mathematics

Content and assessment overview

The AS Mathematics consists of two externally-examined papers. Students must complete all assessment in May/June in any single year.

Paper 1: Pure Mathematics

Written examination: 2 hours

62.5% of the qualification. 100 marks.

Content overview

- Topic 1 – Proof
- Topic 2 – Algebra and functions
- Topic 3 – Coordinate geometry in the (x,y) plane
- Topic 4 – Sequences and series
- Topic 5 – Trigonometry
- Topic 6 – Exponentials and logarithms
- Topic 7 – Differentiation
- Topic 8 – Integration
- Topic 9 – Vectors

Assessment overview

Students must answer all questions.
Calculators can be used in the assessment.

Paper 2: Statistics and Mechanics

Written examination: 1 hour

37.5% of the qualification. 60 marks.

Content overview

- Section A: Statistics
 - Topic 1 – Statistical sampling
 - Topic 2 – Data presentation and interpretation
 - Topic 3 – Probability
 - Topic 4 – Statistical distributions
 - Topic 5 – Statistical hypothesis testing

Section B: Mechanics

- Topic 6 – Quantities and units in mechanics
- Topic 7 – Kinematics
- Topic 8 – Forces and Newton's laws

Assessment overview

The assessment comprises two sections: Section A – Statistics and Section B – Mechanics. Students must answer all questions. Calculators can be used in the assessment.

Advanced GCE in Mathematics (A Level Mathematics)

Preferred entry requirements: Grade 6 or above at GCSE Mathematics

Content and assessment overview

The Advanced GCE in Mathematics consists of three

externally examined papers. Students must complete all assessment in May/June in any single year.

Paper 1: Pure Mathematics 1

Paper 2: Pure Mathematics 2

Each paper is a 2 hour written examination.

33.33% of the qualification. 100 marks.

Content overview

Topic 1 – Proof

Topic 2 – Algebra and functions

Topic 3 – Coordinate geometry in the (x,y) plane

Topic 4 – Sequences and series

Topic 5 – Trigonometry

Topic 6 – Exponentials and logarithms

Topic 7 – Differentiation

Topic 8 – Integration

Topic 9 – Vectors

Assessment overview

Paper 1 and Paper 2 may contain questions on any topic from the pure mathematics content.

Students must answer all questions.

Calculators can be used in the assessment.

Paper 3: Statistics and Mechanics

Written examination: 2 hours

33.33% of the qualification. 100 marks.

Content overview

Section A: Statistics

Topic 1 – Statistical sampling

Topic 2 – Data presentation and interpretation

Topic 3 – Probability

Topic 4 – Statistical distributions

Topic 5 – Statistical hypothesis testing

Section B: Mechanics

Topic 6 – Quantities and units in mechanics

Topic 7 – Kinematics

Topic 8 – Forces and Newton's laws

Topic 9 – Moments

Assessment overview

The assessment comprises two sections: Section A – Statistics and Section B – Mechanics.

Students must answer all questions.

Calculators can be used in the assessment.

Advanced Subsidiary GCE in Further Mathematics (AS Level Further Mathematics)

Entry requirements: Students must be studying or have studied A level mathematics

Content and assessment overview

The Advanced Subsidiary GCE in Further Mathematics consists of two externally-examined papers.

Students must complete all assessment in May/June in any single year.

Paper 1: Core Pure Mathematics 1

Written examination: 1 hour and 40 minutes

50% of the qualification. 80 marks.

Content overview

Proof, Complex numbers, Matrices, Further algebra and functions, Further calculus, Further Vectors

Assessment overview

Students must answer all questions.

Calculators can be used in the assessment.

Paper 2: Further Mathematics Options

Written examination: 1 hour and 40 minutes

50% of the qualification. 80 marks.

Content overview

Students take one of the following ten options:

2A: Further Pure Mathematics 1 and Further Pure Mathematics 2

2B: Further Pure Mathematics 1 and Further Statistics 1

2C: Further Pure Mathematics 1 and Further Mechanics 1

2D: Further Pure Mathematics 1 and Decision Mathematics 1

2E: Further Statistics 1 and Further Mechanics 1

2F: Further Statistics 1 and Decision Mathematics 1

2G: Further Statistics 1 and Further Statistics 2

2H: Further Mechanics 1 and Decision Mathematics 1

2J: Further Mechanics 1 and Further Mechanics 2

2K: Decision Mathematics 1 and Decision Mathematics 2

Assessment overview

Students must answer all questions.

Calculators can be used in the assessment.

Advanced GCE in Further Mathematics (A Level Further Mathematics)

Entry requirements: Students must be studying or have studied A level mathematics

Content and assessment overview

The Advanced GCE in Further Mathematics consists of four externally examined papers. Students must complete all assessment in May/June in any single year.

Paper 1: Core Pure Mathematics 1

Paper 2: Core Pure Mathematics 2

Each paper is 1 hour and 30 minutes written examination
25% of the qualification, 75 marks.

Content overview

Proof, Complex numbers, Matrices, Further algebra and functions, Further calculus, Further vectors, Polar coordinates, Hyperbolic functions, Differential equations.

Assessment overview

Paper 1 and Paper 2 may contain questions on any topics from the Pure Mathematics content. Students must answer all questions. Calculators can be used in the assessment.

Paper 3: Further Mathematics Option 1

Written examination: 1 hour and 30 minutes
25% of the qualification, 75 marks.

Content overview

** Students take one of the following four options:

- A: Further Pure Mathematics 1
- B: Further Statistics 1
- C: Further Mechanics 1
- D: Decision Mathematics 1

Assessment overview

Students must answer all questions.
Calculators can be used in the assessment.

Paper 4: Further Mathematics Option 2

Written examination: 1 hour and 30 minutes
25% of the qualification, 75 marks.

Content overview

** Students take one of the following seven options:

- A: Further Pure Mathematics 2
- B: Further Statistics 1
- C: Further Mechanics 1
- D: Decision Mathematics 1
- E: Further Statistics 2
- F: Further Mechanics 2
- G: Decision Mathematics 2

** There will be restrictions on which papers can be taken together.

Assessment overview

Students must answer all questions.
Calculators can be used in the assessment.

The aims and objectives of the Mathematics department are to enable students to:

Understand coherence and progression in mathematics and how different areas of mathematics are connected.

Apply mathematics in other fields of study and be aware of the relevance of mathematics to the world of work and to situations in society in general.

Use their mathematical knowledge to make logical and reasoned decisions in solving problems both within pure mathematics and in a variety of contexts, and communicate the mathematical rationale for these decisions clearly.

Reason logically and recognise incorrect reasoning.

Generalise mathematically.

Construct mathematical proofs.

Use their mathematical skills and techniques to solve challenging problems which require them to decide on the solution strategy.

Recognise when mathematics can be used to analyse and solve a problem in context.

Represent situations mathematically and understand the relationship between problems in context and mathematical models that may be applied to solve them.

Draw diagrams and sketch graphs to help explore mathematical situations and interpret solutions.

Make deductions and inferences and draw conclusions by using mathematical reasoning.

Interpret solutions and communicate their interpretation effectively in the context of the problem.

Read and comprehend mathematical arguments, including justifications of methods and formulae, and communicate their understanding.

Read and comprehend articles concerning applications of mathematics and communicate their understanding.

Use technology such as calculators and computers effectively, and recognise when such use may be inappropriate.

Take increasing responsibility for their own learning and the evaluation of their mathematical development.