

Advanced Higher Maths

$$\begin{aligned}3x^{2/3} + 5x^{1/3} - 2 &= 0 \\(3x^{1/3} - 1)(x^{1/3} + 2) &= 0 \\3x^{1/3} - 1 = 0 \text{ or } x^{1/3} + 2 &= 0 \\x^{1/3} = \frac{1}{3} \quad x^{1/3} &= -2 \\\sqrt[3]{x} = \frac{1}{3} \quad \sqrt[3]{x} &= -2 \\x = \left(\frac{1}{3}\right)^3 \quad x &= (-2)^3 \\x = \frac{1}{27} \quad x &= -8\end{aligned}$$

Why Mathematics?

Advanced Higher Mathematics builds on your mathematical skills, knowledge and understanding and enables you to integrate your knowledge of different aspects of the subject. The course offers depth and breadth of mathematical experience and provides a sound basis for progression to further study of employment in the areas of mathematical and physical sciences, computer science engineering, biological and social sciences, medicine, accounting, business and management.

What does the course involve?

The basic course is made up of three units.

- The units build on the mathematical knowledge and skills gained at Higher Level.
- At the moment we offer Advanced Higher Pure Maths Units 1,2 and 3.

Methods in Algebra and Calculus (Advances Higher)

The general aim of the Unit is to develop advanced knowledge and skills in algebra and calculus that can be used in practical and abstract situations to manage information in mathematical form. The Outcomes cover partial fractions, standard procedures for both differential calculus and integral calculus, as well as methods for solving both first order and second order differential equations. The importance of logical thinking and proof is emphasised throughout.

Applications of Algebra and Calculus (Advanced Higher)

The general aim of the Unit is to develop advanced knowledge and skills that involve the application of algebra and calculus to real life and mathematical situations, including applications to geometry. Learners will acquire skills in interpreting and binomial theorem, the algebra of complex numbers, properties of functions, and rates of change. Aspects of sequences and series are introduced, including summations, proved by induction.

Geometry, Proof and Systems of Equations (Advanced Higher)

The general aim of the Unit is to develop advanced knowledge and skills that involve geometry, number and algebra, and to examine the close relationship between them. Learners will develop skills in logical thinking. The Outcomes cover matrices, vectors, solving systems of equations, the geometry of complex numbers, as well as processes of rigorous proof.

How is your work assessed?

Units are assessed internally by your teacher/lecturer in accordance with SQA guidelines.

This course is assessed by a combination of internal assessment by the teacher and an external examination set and marked by the SQA.

What prior qualifications do I need, if any, for entry to this course?

- A or B pass at Higher
- or entry at discretion of the Principal Teacher Maths