



A LEVEL Mathematics - Edexcel

WHAT DO I NEED TO KNOW OR BE ABLE TO DO BEFORE TAKING THIS COURSE?

Mathematics at Advanced GCE is a course worth studying not only as a supporting subject for the physical and social sciences, but in its own right. It is challenging and interesting. It builds on work you will have met at GCSE, but also involves new ideas that some of the greatest minds of the millennium have produced. It serves as a very useful support for many other qualifications as well as being a sought-after qualification for the workplace and courses in higher education.

You will need at least a grade 7 at GCSE Mathematics.

WHAT WILL I LEARN ON THIS A LEVEL COURSE?

Mathematics Advanced GCE is divided into three areas:

Core Mathematics

When studying core mathematics Advanced GCE you will be extending your knowledge of such topics as algebra and trigonometry as well as learning some brand new ideas such as calculus. If you enjoyed the challenge of problem solving at GCSE using such mathematical techniques, then you should find the prospect of this course very appealing. Although many of the ideas you will meet in core mathematics are interesting in their own right, they also serve as an important foundation for other branches of mathematics, especially mechanics and statistics.

Mechanics

When you study mechanics you will learn to describe mathematically the motion of objects and how they respond to forces acting upon them, from cars in the street to satellites revolving around a planet. You will learn the technique of mathematical modelling; that is, of turning a complicated physical problem into a simpler one that can be analysed and solved using mathematical methods.

Many of the ideas you will meet in the course form an almost essential introduction to such important modern fields of study as cybernetics, robotics, biomechanics and sports science, as well as the more traditional areas of engineering and physics.

Statistics

When you study statistics you will learn how to analyse and summarise numerical data in order to arrive at conclusions about it. You will extend the range of probability problems that you started for GCSE by using the new mathematical techniques studied on the pure mathematics course.

Many of the ideas you will meet in this course have applications in a wide range of other fields.

- While studying mathematics you will be expected to:
- use mathematical skills and knowledge to solve problems
- solve quite complicated problems by using mathematical arguments and logic. You will also have to understand and demonstrate what is meant by proof in mathematics
- simplify real-life situations so that you can use mathematics to show what is happening and what might happen in different circumstances
- use the mathematics that you learn to solve problems that are given to you in a real-life context
- use calculator technology and other resources (such as formulae booklets or statistical tables) effectively and appropriately; understand calculator limitations and when it is inappropriate to use such technology
- use spreadsheets and specialist statistical packages

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