

Section 1: Basics Facts

Exam Board : Edexcel

Course code : 9MA0

Course structure: 2 yearlinear, examined in summer of Year 13

Coursework: None

Examinations : Three two – hour written papers covering entire content of the course

Paper 1 : Pure mathematics

Paper 2 : Pure mathematics

Paper 3 : Statistics and Mechanics

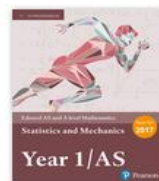
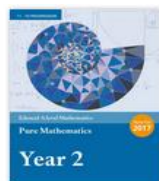
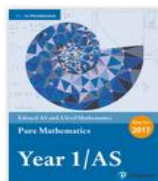
Equipment: Students must have a Casio fx – 991EX CLASSWIZ calculator

Lesson structure: 10 lessons over a fortnight, delivered by 2 staff

Homework: one task per week for each member of staff

independent study of new material on daily basis

Course texts:



Section 2: Year 12 Subject Content

*Pure mathematics**Laws of indices and surds**Equations and inequalities**Binomial expansions**Quadratic equations**Factor theorem**Cubic equations**Equation of a circle**Graphs of functions**Transformation of curves**Trigonometric ratios & graphs**Trigonometric equations**Cosine and sine rules**Vector geometry**Introduction to differentiation**Applications of differentiation**Introduction to integration**Applications of integration**Laws of logarithms**Exponential models**Linear reduction**Statistics**Sampling methods**Large data set**Measures of centre**Measures of spread**Histogram analysis**Cumulative frequency**Correlation & regression**Probability trees**Venn diagrams**Independence/exclusivity**Uniform distribution**Probability distributions**Binomial probabilities**Hypothesis testing**Mechanics**Units**Force diagrams**Equations of motion**Velocity - time graphs**Generalised motion**Motion under gravity**Newton's 2nd law**Connected particles*

Section 3: Advice

You must have studied GCE Higher mathematics

This course is designed for students who enjoy mathematics and relish the challenge of problem solving and applying their knowledge to new concepts

Mathematics is often a necessity for many undergraduate courses

This course relies heavily on a strong understanding of algebra and how it works. You will be expected to work confidently and fluently in 2, 3 or even 4 variables

There are many formulae and concepts which must be committed to memory and rapidly recalled to tackle complex problems

You must be prepared to more than likely have one maths lesson every day and then complete at least one hour of mathematical study every day

A – Level mathematics bears little resemblance to GCSE and you must be prepared for the increase in both workload and difficulty

Section 4: What now?

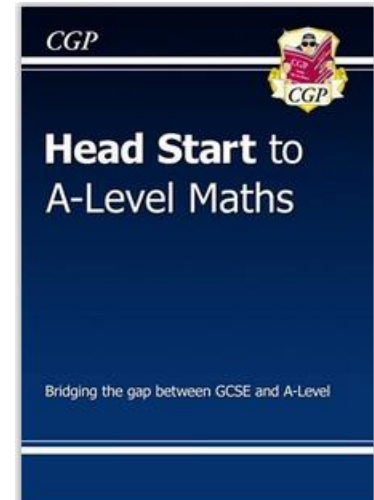
Consider whether you want / need to take A – Level mathematics

Ask your teachers about the course

Ask other students in the sixth form about their thoughts on the course

Ask your teachers in school for material to help you prepare for September

Purchase some material to help you prepare for September



Section 5: Sample Questions

The following are actual Year 12 examination questions.

You should have already studied the content in your GCSE course.

Attempt these questions and take them to one of your teachers to discuss your solutions

The line L_1 has equation $2x + 4y - 3 = 0$

The line L_2 has equation $y = mx + 7$ where m is a constant

L_1 and L_2 are perpendicular

a) Find the value of m

b) Find the coordinates of where L_1 and L_2 meet

The area of the triangle shown is $18\sqrt{3} \text{ cm}^2$

a) Show that $x = 2\sqrt{3}$

b) Find the exact length of BC giving your answer as a simplified surd

