

$$(b) (x^2)^3 (y^3)^3 (z^2)^4 = x^6 y^9 z^8$$

$$(c) (2 x^2 y^2 z^2)^3 = 8 x^6 y^6 z^6$$



# Further Mathematics A Level

"Further Maths lets us specialise into any branch of maths. We have so much more flexibility and have more opportunity to explore applications of the subject. We know exactly what to expect at university as we cover a lot of the degree modules in Further Maths."

## Course Content

### Further Pure Maths

This covers further core topics beyond the A-level. We have opportunities to indulge into Matrices, Proofs, and Complex numbers.

### Statistics

Handling data and interpreting the information it gives us.

### Mechanics

Forces, motion and other elements of the physical world.

### Decision

Algorithms and networks. Looking at creating the shortest and simplest solutions when facing decisions.

## How will I learn?

We focus on developing students as independent learners; working on their ability to analyse and solve problems. In Further Maths they have disciplined themselves to at least 8 hours a week outside of lesson. They are exposed to more applied modules which mean they can now appreciate the application of their maths in the real world. Students will now have experienced all branches of maths, and will be in a position to decide in which career/course they would like to become specialised. After completion of the course they will be extremely well prepared to complete a maths/mathematically based degree.

## Minimum Course Requirement

GCSE Maths Grade 8; Note - Must be combined with Maths

## How will I be assessed?

For Further Maths, we will be doing the full normal Maths A level within the first year, thus covering Pure 1, Pure 2 and Statistics/Mechanics. Options for Further Mathematicians in Year 13 will feature combinations of Further Mechanics and Further Decision.

## Which awarding body is the course validated by?

Edexcel

## What qualification will I receive?

A level Further Mathematics

## What can I do with this qualification?

Careers for mathematicians

Studying maths helps you develop skills in logical thinking, problem-solving and decision-making, which are valued by employers across many job sectors.

- Actuarial analyst
- Actuary
- Chartered accountant
- Chartered certified accountant
- Data analyst
- Investment analyst
- Research scientist (maths)
- Secondary school teacher
- Statistician
- Systems developer
- Civil Service fast streamer
- Financial manager
- Financial trader
- Meteorologist
- Operational researcher
- Quantity surveyor
- Software tester



**EX.2** Simplify completely:

$$(a) (x^2 y^3)^2 = (x^2)^2 (y^3)^2 = x^4 y^6$$

$$(b) (x^2)^3 (y^3)^3 (z^2)^4 = x^6 y^9 z^8$$