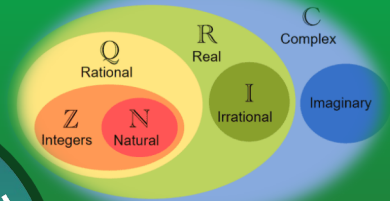


Core Pure 1

A Level Further Mathematics



Complex Numbers

Addition and subtraction of complex numbers, complex conjugate, quadratic, cubic and quartic equations.



Argand diagrams

Modulus-argument form of a complex number (polar form), multiplication and division, loci and regions.



Series

Sum of the first n natural numbers, sum of the first n squared natural numbers, sum of the first n cubed natural numbers



Roots of polynomials

Relationships between roots and the coefficients of quadratic, cubic and quartic equations. Linear transformation of roots.



Matrices

Addition, subtraction and multiplication of matrices. Finding the inverse of a 2×2 matrix and a 3×3 matrix, calculator methods and solving systems of equations.



Linear Transformations

Geometrical interpretation of a multiplying a position vector/point by a matrix, linear transformation as a matrix, reflection, rotation, enlargement, scaling, points of invariance.



Proof by Induction

Using proof by induction to prove sums of series, divisibility rules and generalised matrix multiplication.



Vectors

2D vectors, 3D vectors, Vector equation of a lines and plane, scalar product, scalar product form of a plane, angles between lines and planes, intersection points between lines and planes.



Volumes of revolution

Volume of revolution around the y -axis, volume of revolution around the x -axis.



Revision

Exam questions.



	2	...	
1	a_{11}	a_{12}	a_{1n}
2	a_{21}	a_{22}	a_{2n}
3	a_{31}	a_{32}	a_{3n}
...	\vdots	\vdots	\vdots
m	a_{m1}	a_{m2}	a_{mn}