



## Level H Courses

### Areas covered:

Algebra 1 & 2 / Geometry / Trigonometry / Pre-Calculus

#### Level H1

- Complex Numbers
- Quadratics
- Conic Sections
- Polynomial Division and Factoring
- Integer and Rational Roots of Polynomials

#### Level H2

- Proof by Contradiction and Irrational Roots
- Multivariable Polynomials
- Sequence of Series
- Binomial Co-efficient
- Identities and Induction

#### Level H3

- Combinatorial Identities
- Multivariable Polynomials
- Angles
- Congruent Triangles
- Area
- Similar Triangles and Right Triangles

#### Level H4

- Polygons
- Circles and Angles
- Tangents
- Transformations
- Coordinate Geometry

#### Level H5

- Diophantine Equations
- Perfect Squares
- Algebraic Methods of Number Theory
- Theorems: Euler's Theorem, Fermat's Little Theorem and Pi Functions

**Level H6**

- Introduction to Trigonometry
- Trigonometric Graphs and Identities
- Laws of Sine and Cosine
- Parametric Equations
- Vectors and Matrices

**Level H7**

- Pre-calculus Review
- Logarithms, Trigonometric Functions and Exponentials
- Introduction to Derivatives
- Introduction to Limits and Continuity
- Integration, Differential Equations

**Level H8**

- Taylor Series
- Parametric Curves
- Polar Coordinates
- Application of Derivatives
- Improper Integrals