



WORLD MATHS SCIENCE OLYMPIAD

MATHEMATICS

Class -11

Unit 1: Sets and Functions

- Sets and their representation, union, intersection, complement.
- Types of relations and functions.
- Domain, co-domain and range, one-one, onto, into functions.

Unit 2: Algebra

- Principle of Mathematical Induction.
- Complex numbers and quadratic equations.
- Linear inequalities (algebraic and graphical).
- Permutations and Combinations.
- Binomial Theorem and its applications.
- Sequences and Series (A.P., G.P., relation between successive terms).

Unit 3: Coordinate Geometry

- Straight lines, slope, distance formula, section formula.
- Conic sections – Parabola, Ellipse, Hyperbola (standard equations and properties).
- Circles (equation, tangent, normal).

Unit 4: Calculus

- Concept of limit, continuity and differentiability.
- Derivatives – basic rules, chain rule, implicit differentiation.
- Application of derivatives – tangents, normals, rate of change, increasing/decreasing functions.

Unit 5: Statistics & Probability

- Measures of dispersion, mean deviation, variance, standard deviation.
- Probability – classical and axiomatic approach.

Unit 6: Mathematical Reasoning

- Statements, truth values, logical connectives, simple applications.