



*Is your child a Maths genius?
This challenge will bring it to the world!
"Discovering the next Maths wizard of the nation."*



The Ramanujan Mathematics Challenge

Class: 9

SYLLABUS

+ NUMBER SYSTEMS

- Introduction
- Irrational Numbers
- Real Numbers and their Decimal Expansions
- Representing Real Numbers on the Number Line
- Operations on Real Numbers
- Laws of Exponents for Real Numbers

+ POLYNOMIALS

- Introduction
- Polynomials in One Variable
- Zeroes of a Polynomial
- Remainder Theorem
- Factorisation of Polynomials
- Algebraic Identities

+ COORDINATE GEOMETRY

- Introduction
- Cartesian System
- Plotting a Point in the Plane if its Coordinates are given

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SYLLABUS

+ LINEAR EQUATIONS IN TWO VARIABLES

- Introduction
- Linear Equations
- Solution of a Linear Equation
- Graph of a Linear Equation in Two Variables
- Equations of Lines Parallel to x-axis and y-axis

+ INTRODUCTION TO EUCLID'S GEOMETRY

- Introduction
- Euclid's Definitions, Axioms and Postulates
- Equivalent Versions of Euclid's Fifth Postulate

+ LINES AND ANGLES

- Introduction
- Basic Terms and Definitions
- Intersecting Lines and Non-intersecting Lines
- Pairs of Angles
- Parallel Lines and a Transversal
- Lines Parallel to the same Line
- Angle Sum Property of a Triangle

+ TRIANGLES

- Introduction
- Congruence of Triangles
- Criteria for Congruence of Triangles
- Some Properties of a Triangle
- Some More Criteria for Congruence of Triangles
- Inequalities in a Triangle

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SYLLABUS

+ QUADRILATERALS

- Introduction
- Angle Sum Property of a Quadrilateral
- Types of Quadrilaterals
- Properties of a Parallelogram
- Another Condition for a Quadrilateral to be a Parallelogram
- The Mid-point Theorem

+ AREAS OF PARALLELOGRAMS AND TRIANGLES

- Introduction
- Figures on the same Base and Between the same Parallels
- Parallelograms on the same Base and between the same Parallels
- Triangles on the same Base and between the same Parallels

+ CIRCLES

- Introduction
- Circles and its Related Terms : A Review
- Subtended by a Chord at a Point
- Perpendicular from the Centre to a Chord
- Circle through Three Points
- Equal Chords and their Distances from the Centre
- Angle Subtended by an Arc of a Circle
- Cyclic Quadrilaterals

+ CONSTRUCTIONS

- Introduction
- Basic Constructions
- Some Constructions of Triangles
- Perpendicular from the Centre to a Chord

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SYLLABUS

HERON'S FORMULA

- Introduction
- Area of a Triangle – by Heron's Formula
- Application of Heron's Formula in finding Areas of Quadrilaterals

SURFACE AREAS AND VOLUMES

- Introduction
- Surface Area of a Cuboid and a Cube
- Surface Area of a Right Circular Cylinder
- Surface Area of a Right Circular Cone
- Surface Area of a Sphere
- Volume of a Cuboid
- Volume of a Cylinder
- Volume of a Right Circular Cone
- Volume of a Sphere

STATISTICS

- Introduction
- Collection of Data
- Presentation of Data
- Geographical Representation of Data
- Measures of Central Tendency

PROBABILITY

- Introduction
- Probability – an Experimental Approach