



*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:11**

## **SYLLABUS**

### **SETS**

- Introduction
- Sets and their Representations
- The Empty Set
- Finite and Infinite Sets
- Equal Sets
- Subsets
- Universal Set
- Venn Diagrams
- Operations on Sets
- Complement of a Set

### **RELATIONS AND FUNCTIONS**

- Introduction
- Cartesian Product of Sets
- Relations
- Functions

### **TRIGONOMETRIC FUNCTIONS**

- Introduction
- Angles
- Trigonometric Functions
- Trigonometric Functions of Sum and Difference of Two Angles

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## **SYLLABUS**

### **COMPLEX NUMBERS AND QUADRATIC EQUATIONS**

- Introduction
- Complex Numbers
- Rationalised
- Algebra of Complex Numbers
- The Modulus and the Conjugate of a Complex Number
- Argand Plane and Polar Representation

### **LINEAR INEQUALITIES**

- Introduction
- Inequalities
- Algebraic Solutions of Linear Inequalities in One Variable and their Graphical Representation

### **PERMUTATIONS AND COMBINATIONS**

- Introduction
- Fundamental Principle of Counting
- Permutations
- Combinations

### **BINOMIAL THEOREM**

- Introduction
- Binomial Theorem for Positive Integral Indices

### **SEQUENCES AND SERIES**

- Introduction
- Sequences
- Series
- Geometric Progression (G.P.)
- Relationship Between A.M. and G.M



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NOW!**

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## **SYLLABUS**

### **STRAIGHT LINES**

- Introduction
- Slope of a Line
- Various Forms of the Equation of a Line
- Distance of a Point From a Line

### **CONIC SECTIONS**

- Introduction
- Sections of a Cone
- Circle
- Rationalised
- Parabola
- Ellipse
- Hyperbola

### **INTRODUCTION TO THREE-DIMENSIONAL GEOMETRY**

- Introduction
- Coordinate Axes and Coordinate Planes in Three-Dimensional Space
- Coordinates of a Point in Space
- Distance between Two Points Introduction

### **LIMITS AND DERIVATIVES**

- Introduction
- Intuitive Idea of Derivatives
- Limits
- Limits of Trigonometric Functions
- Derivatives



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## SYLLABUS

### + STATISTICS

- Introduction
- Measures of Dispersion
- Range
- Mean Deviation
- Variance and Standard Deviation

### + PROBABILITY

- Event
- Axiomatic Approach