

Mathematical Olympiad Online Training Programme (Level 1)
by
Bhaskaracharya Pratishthana, Pune

Date of Commencement of the course : 17th June 2021

Eligibility for the course: More than 85% marks or equivalent grade in Mathematics in Std. 7, a keen interest in Mathematics and willingness to work hard.

The 8th std. students who are keen to appear for Mathematical Olympiad Examinations (RMO, INMO) and have good background in Mathematics may consider this course instead of the Foundations of Mathematics Course for 8th Standard Students.

The 9th std. students who have done 8th Std. Foundations of Mathematics Course last year have the option of either Olympiad Level 1 Course or directly Olympiad Level 2 Course (Problem Solving) depending upon their competence.

Objective and expected outcome of the Programme:

- Beginning of the preparation for Mathematical Olympiad Competitions. (RMO, INMO, IMO). The topics in syllabus for RMO will be covered this year. The students are expected to make a good attempt at RMO 2022.
- Interactive teaching learning processes enable students to learn mathematics independently.
- Highly qualified and experienced faculty provides students an opportunity to explore the subtleties of the subject.
- The training enhances the confidence of students and improves the learning abilities.
- The programme also brings out the beauty of higher mathematics and inculcates the spirit of research among students.
- The programme aims at generating interest in mathematics and creating a strong background in the subject useful for career in branch of higher education.

Timings for the course:

Thursday: 5.00 pm to 6.30 pm and Saturday 5.00 pm to 6.30 pm

Fees for the programme: Rs. 16000/-

Syllabus: Refer to (<https://olympiads.hbcse.tifr.res.in/how-to-prepare/syllabus/>)

The syllabus for Mathematical Olympiad (regional, national and international) is pre-degree college mathematics.

The areas covered are arithmetic of integers, geometry, quadratic equations and expressions, trigonometry, co-ordinate geometry, system of linear equations, permutations and combination, factorization of polynomial, inequalities, elementary combinatorics, probability theory and number theory, finite series and complex numbers and elementary graph theory.

The syllabus does not include calculus and statistics.

The major areas from which problems are given are algebra, combinatorics, geometry and number theory.

The syllabus is in a sense spread over Class XI to Class XII levels, but the problems under each topic involve high level of difficulty and sophistication. The difficulty level increases from RMO to INMO to IMO.

IN THIS PROGRAMME WE WILL FOCUS ON PREPARATION FOR REGIONAL MATHEMATICAL OLYMPIAD. (RMO).

Reference books:

1. An Excursion in Mathematics: Ed. M. R. Modak, S. A. Katre, V. V. Acharya, V. M. Sholapurkar, Bhaskaracharya Pratishthana, Pune.
2. Challenge and Thrill of Pre-College Mathematics: V. Krishnamurthy, C. R. Pranesachar, K. N. Ranganathan, New Age International Publications.
3. Problem Primer for the Olympiad, C. R. Pranesachar and others, Interline Publishing Pvt. Ltd.
4. Introduction to the Theory of Numbers: Niven and Zuckerman (Wiley).
5. Elementary Number Theory: David Burton (UBS).
6. Higher Algebra: Hall and Knight (Macmillan).
7. Higher Algebra: Barnard and Child (Macmillan).
8. Combinatorics: V. K. Balakrishnan (Schaum's Series).
9. Applied Combinatorics: A. Tucker (Wiley).
10. Mathematical Circles: Dmitri Fomin and others (University Press).

Teaching Faculty

Prof. V. M. Sholapurkar, M.Sc., M.Phil, Ph.D. in Mathematics,
Mr. Kiran Barve, M.Sc. and M.Phil in Mathematics,
Mr. Prasad Lonkar, M.Sc. Mathematics,
Dr. Aditi S. Phadke, M.Sc. Mathematics (IIT Bombay), Ph. D. in Mathematics

Coordinator of the programme:

Dr. Aditi S. Phadke
9850974995
aditiphadke123@gmail.com