

## Chennai Mathematical Institute

### Applications of Mathematics

The entrance test for M.Sc. Applications of Mathematics will consist of Class XII / B. Sc. level questions on following topics:

- Sets, operations on sets. Prime numbers, factorization of integers and divisibility. Rational and irrational numbers. Permutations and combinations. Binomial theorem. Logarithms. Theory of quadratic equations. Polynomials and remainder theorem. Arithmetic, geometric and harmonic progressions. Complex numbers. Algebraic inequalities.
- Functions, one-one functions, onto functions. Limits and continuity. Derivatives and applications to maxima and minima. Sequences and series.
- Matrices, Rank of a Matrix, eigenvalues, system of linear equations.

#### **Suggested reading material**

1. *Calculus*, Volume 1, Tom M. Apostol.
2. *Understanding Mathematics*, K.B. Sinha et al, Universities press, Hyderabad.