

<https://brainshineacademy.com/course/class-12-cbse-mathematics/>

# **BRAINSHINE** **ACADEMY**

*Online*  
**HOME**  
**TUITIONS**



**9080138609**

[www.brainshineacademy.com](http://www.brainshineacademy.com)



## **CLASSES WE OFFER**

### **ONE-TO-ONE:**

We allocate one teacher to only one student so that the student interact with teacher and learn the concepts thoroughly.

### **GROUP CLASS FOR 5 STUDENTS:**

We allocate one teacher for group of 5 students. This promotes friendly competition and interactive classes while simultaneously maintaining an individual learning experience for each student.

### **GROUP CLASS FOR 10 STUDENTS:**

We allocate one teacher for group of 10 students. All the features are the same as above group class and it is cost effective.

### **GOAL:**

Make the students master the concepts deeply.

### **PRACTICE STYLE:**

Let the students understand the concepts through explaining with real time examples.

### **TEACHING APPROACH:**

Teacher cues the student to discover the answer.

The teachers here are highly experienced and well-qualified, having graduated from prestigious institutions such as IIT, NIT, IIIT, CLRI, Anna University, and others. Their expertise and strong academic background contribute significantly to the high-quality education provided.



## What We Do?

*At Brainshine Academy, we offer comprehensive range of online tutoring services designed to support students at every stage of their academic journey.*

## Why choose us?

**Personalized learning:** We provide tutoring sessions to each student's unique needs, learning style, and pace. Our tutors adapt their methods to ensure every lesson is both engaging and effective.

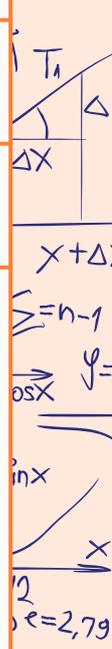
**Test Preparation & Exam Strategies:** Our test preparation services focus on strategy, practice, and review to help you succeed in your exams.

**Progress Monitoring & Feedback:** We track your progress and provide regular updates on your improvement. Our tutors give constructive feedback, recommend areas for further growth, and ensure you stay on track to meet your academic goals.

**Homework Assistance:** We offer tutoring sessions to support you with school projects, essays, and homework.



# MATHEMATICS CURRICULUM

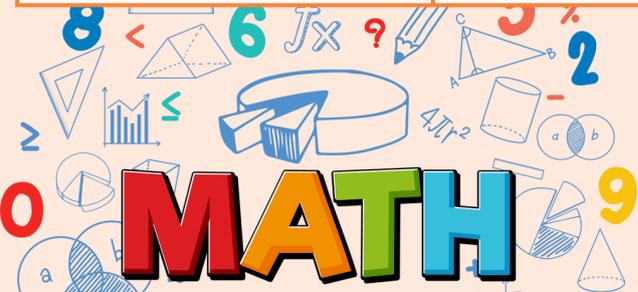


Topic	Sub Topic	No. of Classes
Relations and Functions	Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.	2-3
Inverse Trigonometric Functions	Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.	2-3
Matrices	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operations on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Noncommutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).	3-4
Determinants	Determinant of a square matrix (up to $3 \times 3$ matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.	3-4
Continuity and Differentiability	Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, like $\sin^{-1} x$ , $\cos^{-1} x$ and $\tan^{-1} x$ , derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.	4-5
Applications of Derivatives	Applications of derivatives: rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations).	3-4





Integrals	Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals and problems based on them. Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.	4-5
Applications of the Integrals	Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)	3-4
Differential Equations	Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree.	4-5
Vectors	Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.	3-4
Three - dimensional Geometry	Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.	2-3
Linear Programming	Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).	3-4
Probability	Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.	4-5



# WHAT STUDENTS SAY

Y

★★★★★

- by Yuvaraj  
attended BTech Tuition  
posted on 04 Jul, 2018

"Vastly experienced, Elusive teaching, clears doubt on par to the student capacity, motivating person."

R

★★★★★

- by RAJAVIKNESH  
attended Class 11 Tuition  
posted on 04 Jul, 2018

"Excellent in teaching. Level of teaching is totally well and good. I recommend. Tutor is having good knowledge on teaching the subjects. Especially I get support whenever I needed."

R

★★★★★

- by Rajesh  
attended Class 10 Tuition  
posted on 04 Jul, 2018

"Way of explaining the concepts is very good. Theoretical as well as technically good."

G

★★★★★

- by GEETHA BIMALRAJ  
attended Class 9 Tuition  
posted on 05 Jul, 2018

"Excellent tutor. Very dedicated and thorough in teaching. Has been teaching for the last three years and have not had any issues. definitely recommended."

T

★★★★☆

- by Thamim Fathima Nisha.A  
attended BTech Tuition  
posted on 12 Jul, 2018

"Very good. He is more interactive with us. He teaches us more concepts clearly. He clears our doubts without any hesitation."

P

★★★★★

- by Pavi

attended **Class 12 Tuition**

posted on 24 Sep, 2019

"Best one for all subject well experience in all subjects daily tests and clearing doubts with an example soon. "

S

★★★★★

- by Saravanan

attended **Class 10 Tuition**

posted on 24 Sep, 2019

"Good mentor. Really helped in my exam preparation. Thank you sir for being my tuition teacher. "

B

★★★★★

- by Bharathi

attended **Class 10 Tuition**

posted on 24 Sep, 2019

"Rajavel sir is very kind and humble. He won't scold if done a mistake. We can easily understand when he teaches. He will teach us a line by line. He is the best teacher I have ever seen in my life. "

★★★★★

- by Sathidevi S Raj

attended **Class 10 Tuition**

posted on 25 Sep, 2019

"Very polite and humble. Makes the student understand the concepts in easiest and spends quality time with student. Student is very comfortable. "

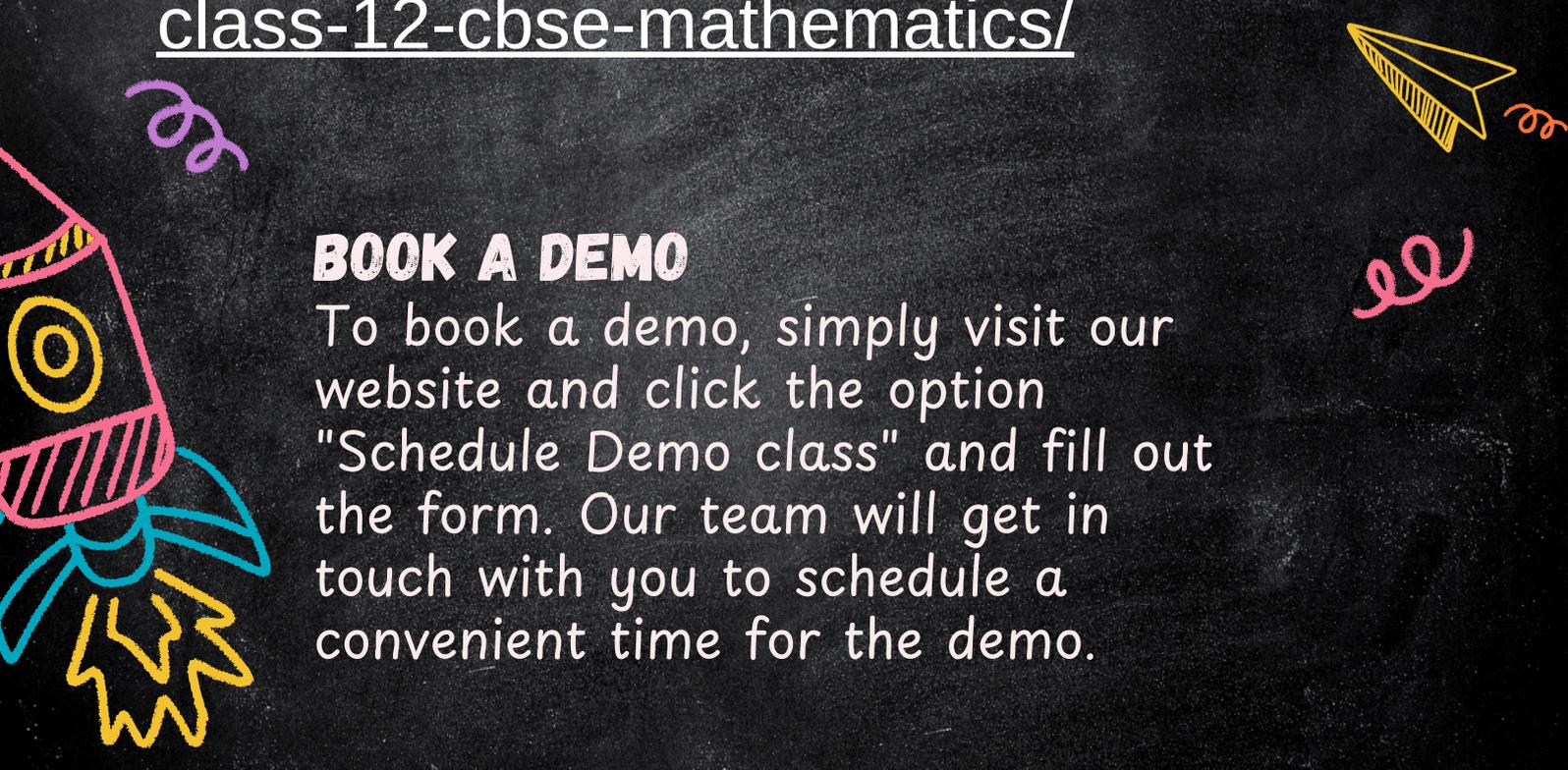


thank  
you

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To book a demo, simply visit our website and click the option "Schedule Demo class" and fill out the form. Our team will get in touch with you to schedule a convenient time for the demo.

"We motivate the students to build skills and develop confidence as they pursue educational success."