



Agoura Math Circle

SAT Math Level 2

Subject Test Training

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The SAT Math Level 2 Subject Test is a standardized test used for college admissions in the United States. It is currently administered by the College Board. The SAT Math Level 2 subject test covers four Mathematical skill areas. The test score is accepted by all four-year colleges and universities in the U.S as well as more than 225 universities outside of the U.S.

In this course, we'll discuss various sections of the SAT Math Level 2 subject test in detail with various tips in addressing those efficiently. The course is broken into 12 sessions to cover these following subject areas:

1. Number and operations
2. Algebra and functions
3. Geometry and measurement (coordinate, three-dimensional, and trigonometry)
4. Data analysis, statistics and probability

Final Exam: A full test will be given as a final exam

Course flow: The online sessions will cover a combination of tips, working examples, and related homework assignments to master all covered tips. The pace of these sessions will enable students to retain the learnings through carefully selected homework assignments.

Recommended Textbooks

[SAT II Mathematics level 2: Designed to get a perfect score on the exam. 5th Edition by Dr. John Chung](#)

[Texas Instruments TI-84 Plus CE Graphing Calculator](#)

Class Schedule

Alternate Sundays 10:00 AM PST – 12:00pm PST (online).

Class	Lecture & Class Work	Homework Review	
SAT Math Level 2 Training	10 AM - 11:30 AM	11: 30 AM to 12:00 PM	

Please note that if you miss two classes in a row, you'll not be able to follow the topics anymore. Students must login 10 min before the start of the class.

Course Details

Pre-requisites: Good understanding of basic mathematical concepts (no higher than taught in Senior Intermediate level at Agoura Math Circle). Also, students are expected to get their own desktops or laptops to program.

Course Registration & Website: Each student should register for the class. All course communication, homework submission will be through the course website. Each student has to register for each one of the four sessions irrespective of whether they have previously registered or not. Preference will be given to students who have attended previous sessions.

Class workload: Apart from the 2 hours of class once every 2 weeks, students are expected to spend at least 45 minutes every day of the week for a total workload of between 10 – 12 hours. If you can't make this commitment for about 2 hours, please do not register.

Class style: These online classes will be in an interactive manner. Instead of striving towards finishing a certain amount of material in each class, we'll work towards certain milestones to complete in every session. During the courses, a textbook will be recommended for each part. Students are expected to come to class with a calculator.

Homework Policy: After each class, homework assignments will be mailed out. Most of the homework problems are handpicked to master concepts from previous sessions. We encourage everyone to put their best effort in solving homework problems on their own. We will allocate time to review the previous week's homework and solve any hard questions.

Final Exam Policy: Final exam will be a full test.

What will you learn from this course?

1. Learn the structure of the SAT Math Level 2 Subject test
2. Learn time management skills to apply as per your convenience
3. How to identify the patterns of the various questions and arrive at the answer effectively.
4. Applying tips to get a perfect score

Syllabus**Week 1**

1. Identical Equations
2. Remainder Theorem
3. Factor Theorem
4. Sum and Product of the roots
5. Complex Number
6. Conjugate Roots

Week 2

1. Linear Function
2. Distance from a Point to a line
3. Distance from a Point to a plane
4. Quadratic Function
5. Discriminant
6. Circle

Week 3

1. Ellipse
2. Parabola
3. Hyperbola
4. Function
5. Domain and Range of a composite function
6. Piecewise-Defined Function

Week 4

1. Odd and Even Function
2. Combinations of Function
3. Periodic Function
4. Inverse Function
5. The Existence of an Inverse Function
6. Leading Coefficient Test (behavior of graph)

Week 5

1. Arithmetic Sequence
2. Geometric Sequence
3. Exponential Functions
4. Logarithmic Function
5. Basic Trigonometric Identities
6. Circle (Trigonometry)

Week 6

_____ **Mid Term Test – 25 questions, 30 min.**

- **Test will contain questions pertaining to the last 30 tips**

Week 7

1. Reference Angles and Cofunction
2. Trigonometric Graphs
3. Inverse Trigonometric Functions
4. Sum and difference of angles
5. Double Angle Formula
6. Half Angle Formula

Week 8

1. Trigonometric Equation
2. The Law of Sines
3. The Law of Cosines
4. Permutation
5. Combination
6. Dividing Group

Week 9

1. Binomial Expansion Theorem
2. Sum of Coefficients of a Binomial Equation
3. Binomial Probability
4. Probability with Combinations
5. Heron's Formula
6. Vectors in the Plane

Week 10

1. Interchange of Inputs
2. Polynomial Inequalities
3. Rational Inequalities
4. Limits
5. Rational Function and Asymptote
6. Parametric Equations

Week 11

1. Polar Coordinates
2. Matrix
3. Inclination Angles
4. Angle between Two Lines
5. Intermediate Value Theorem
6. Rational Zero Test
7. Descartes Rule of Sign

Week 12

**Final Exam - A full SAT Math Level 2 Subject Test.
50 questions / 1-hour timed test.**