

Integrated Math, Part 2



How to Take This Course

Using a math notebook, work through each lesson, copying the examples in the videos, and reading. When there are practice problems work those out in the notebook as well. As you complete the quizzes, write the problems out in the math notebook to use for test review.

Complete all the quizzes and the assignment in each unit. Once the quizzes for a unit are complete, you will have access to the unit test. We recommend you complete the unit assignment before you attempt the unit test, the assignment will help you prepare. You will have access to the final when all unit tests are complete and your assignments are graded.

Allow 2-3 days for an assignment to be graded. Read the full [course instructions](#) to understand the course grading.

Course Instructions	<input checked="" type="checkbox"/>
How This Course Works & Suggested Timeline	
Submitting Your Assignments	
Ask The Teacher	
Meet your teacher for this course and ask a question.	
MANDATORY QUIZ - Take me before you begin this course!	<input checked="" type="checkbox"/>

Unit 1: Trigonometry Ratios

In this unit you will:

- Use the Pythagorean theorem to find the lengths of sides of right triangles and polygons on the coordinate plane.
- Evaluate the six basic trigonometric functions and use them to find the lengths of sides of a right triangle.
- Find the measures of angles of a right triangle using the inverse trig functions.
- Use the ratios of special 30-60-90 triangles and 45-45-90 triangles to identify angles measures and lengths of triangles.
- Use the law of sines and the law of cosines to find the lengths of sides of any triangle.

1.1 Pythagorean Theorem	
Quiz 1.1	<input checked="" type="checkbox"/>
1.2 Basic Trigonometry Ratios	
Quiz 1.2	<input checked="" type="checkbox"/>
1.3 Inverse Trigonometric Ratios	
Quiz 1.3	<input checked="" type="checkbox"/>
1.4 Trigonometry Ratios on Special Functions	
Quiz 1.4	<input checked="" type="checkbox"/>
1.5 Law of Sine and Cosines	
Quiz 1.5	<input checked="" type="checkbox"/>
Unit 1 Assignment: Trigonometry	<input checked="" type="checkbox"/>

Unit 2: Trigonometric Functions

In this unit you will learn:

- About radians, a method for measuring angles.
- About the unit circle with a radius of one.
- How to prove trigonometry identities.
- How to find the angle when you know a ratio and solve trigonometric functions.
- How to graph a trigonometric function and find the amplitude, phase shift, and period.

2.1 Radians and Special Triangles	
Quiz 2.1	<input checked="" type="checkbox"/>
2.2 The Unit Circle	
Quiz 2.2	<input checked="" type="checkbox"/>
2.3 Properties of Trig Functions NEW	
Quiz 2.3	<input checked="" type="checkbox"/>
2.4 Solving Trig Functions	
Quiz 2.4	<input checked="" type="checkbox"/>
2.5 Graphing and Transforming Trigonometric Functions	
Quiz 2.5	<input checked="" type="checkbox"/>
Unit 2 Assignment: The Ferris Wheel	<input checked="" type="checkbox"/>

Unit 3: Exponential and Logarithmic Functions

In this unit you will learn:

- How to find inverse functions.
- To solve exponential equations by changing the base.
- The relationship between a logarithmic and exponential function and properties of logarithmic functions.
- To prove logarithmic identities.
- To solve logarithmic equations including growth and decay.
- To graph logarithmic and exponential functions.
- To recognize and predict terms for geometric sequences as well as calculate the sum of finite geometric series and convergent infinite series.

3.1 Inverse Functions	
Quiz 3.1	<input checked="" type="checkbox"/>
3.2 Exponential Functions	
Quiz 3.2	<input checked="" type="checkbox"/>
3.3 Properties of Logarithmic Functions	
Quiz 3.3	<input checked="" type="checkbox"/>
3.4 Base 10 and Base e	
Quiz 3.4	<input checked="" type="checkbox"/>
3.5 Logarithmic Equations	
Quiz 3.5	<input checked="" type="checkbox"/>
3.6 Transforming Exponential and Logarithmic Functions	
Quiz 3.6	<input checked="" type="checkbox"/>
3.7 Geometric Sequence and Series	
Quiz 3.7	<input checked="" type="checkbox"/>
Unit 3 Assignment: Logarithmic Puzzles	<input checked="" type="checkbox"/>

Unit 4: Conic Sections

In this unit you will:

- Recognize equations for and graphs of conic sections, including those for circle, ellipses, hyperbolas, and parabolas.
- Decipher the center and radius of a circle, given its equations, as well as match graphs of circles to their equations.
- Manipulate equations for circles into standard form, so they can be analyzed more easily.
- Sketch an ellipse from its equations by identifying its center, major and minor axis, and focal points.
- Analyze the elements and characteristics of hyperbolas and sketch their graphs, given an equation.
- Graph parabolas using key components of their equations, such as their vertex, axis of symmetry, and focus.
- Distinguish between circles, ellipses, hyperbolas, and parabolas, using only their equations.

4.1 Circles: Equations & Graphs	
Quiz 4.1	<input checked="" type="checkbox"/>
4.2 Ellipses: Equations & Graphs	
Quiz 4.2	<input checked="" type="checkbox"/>
4.3 Hyperbolas: Equations & Graphs	
Quiz 4.3	<input checked="" type="checkbox"/>
4.4 Parabolas: Equations & Graphs	
Quiz 4.4	<input checked="" type="checkbox"/>
Unit 4 Assignment: Math Art	<input checked="" type="checkbox"/>

Unit 5: Polar Coordinates

In this unit you will learn:

- The elements of a polar coordinate, and how to graph them.
- Use trigonometry to determine the rectangular and polar coordinates of a polar graph.
- The relationships between rectangular and polar coordinates to find equivalent equations.
- Graph polar equations.
- Create a masterpiece using polar equations using Desmos calculator.

5.1 Coordinates in the Polar Plane	
Quiz 5.1	<input checked="" type="checkbox"/>
5.2 Using Trigonometry to convert points	
Quiz 5.2	<input checked="" type="checkbox"/>
5.3 Polar Equations and Rectangular Equations	
Quiz 5.3	<input checked="" type="checkbox"/>
5.4 Graphing Polar Equations	
Quiz 5.4	<input checked="" type="checkbox"/>
Unit 5 Assignment: Polar Art	<input checked="" type="checkbox"/>

Unit 6: Vectors and Motion

In this unit you will:

- Graph vectors on the coordinate plane using magnitude and direction.
- Determine the magnitude and direction of a vector using trigonometry.
- Add and subtract vectors both analytically and visually.
- Multiply vectors by a scalar.
- Multiply vectors using the dot product.

6.1 Introduction to Vectors	
Quiz 6.1	<input checked="" type="checkbox"/>
6.2 Magnitude and Directions	
Quiz 6.2	<input checked="" type="checkbox"/>
6.3 Sum and Difference Vectors	
Quiz 6.3	<input checked="" type="checkbox"/>
6.4 Scalar Multiples	
Quiz 6.4	<input checked="" type="checkbox"/>
6.5 Dot Products	
Quiz 6.5	<input checked="" type="checkbox"/>
Unit 6 Assignment: Ocean Voyage	<input checked="" type="checkbox"/>

Unit 7: Probability

In this unit we will learn:

- How to solve real-life problems involving permutations and combinations, with scenarios like how many ways a certain number of players can form a roster, or how many ways some friends can be arranged in a photo.
- How to assess whether a combination or a permutation is required to solve a particular problem, and how to perform the appropriate calculation. How to solve random chance probability problems and to solve both "replacement" and "without replacement" problems.
- How to use the binomial theorem to raise polynomials to large powers.

7.1 Permutations	
Quiz 7.1	<input checked="" type="checkbox"/>
7.2 Combinations	
Quiz 7.2	<input checked="" type="checkbox"/>
7.3 Basic Probability	
Quiz 7.3	<input checked="" type="checkbox"/>
7.4 Binomial Theorem/Probability	
Quiz 7.4	<input checked="" type="checkbox"/>
7.5 Two Way Tables	
Quiz 7.5	<input checked="" type="checkbox"/>
7.6 Compound Events	
Quiz 7.6	<input checked="" type="checkbox"/>
Unit 7 Assignment: Probability - Game of Chance	<input checked="" type="checkbox"/>

Unit 8: Data and Statistics

In this unit, you will learn

- To choose the right types of data to gather to create a statistical analysis.
- How to organize data, manipulate data, and compute measures of central tendency such as mean, median, and mode.
- How to create visuals for measures of central tendency such as bar graphs, box plots, and histograms.
- How to compute the standard deviation of large and small data sets.
- How to determine if a data set is normal in order to make comparisons.
- How to use statistic analysis to compare data sets.

8.1 Data Gathering - Surveys, Experiments	
Quiz 8.1	<input checked="" type="checkbox"/>
8.2 Measures of Central Tendency	
Quiz 8.2	<input checked="" type="checkbox"/>
8.3 Variation	
Quiz 8.3	<input checked="" type="checkbox"/>
8.4 Sampling Distribution	
Quiz 8.4	<input checked="" type="checkbox"/>
8.5 Normal Curve	
Quiz 8.5	<input checked="" type="checkbox"/>
Unit 8 Assignment: ScreenTime Project	<input checked="" type="checkbox"/>

Final Exam

Once you have completed all of the unit tests and all of your assignments have been graded, the final exam will become visible.

Warning: You have only ONE attempt at the final.

Are you ready to take the final? We highly recommend you take the practice final first and if you are weak in any area, review the relevant course material again. You have unlimited attempts at the practice final, it will help you to prepare.

Good Luck!!

Practice Final	
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Course Completion

The "Certificate" and "Request a Course Completion Record" links below are not active, they cannot be accessed until you have completed the final. Upon satisfying this requirement, the links will become active and you can use them.

Before you go, we would appreciate your opinion on the course, please take 1 minute to complete the feedback form. We hope you enjoyed this course!

Course Feedback	
Thank you for taking this course! Let us know what you think about it.	
Request a Course Completion Record	
If you need SVHS to send proof of your course completion directly to your school, complete this form.	
If you need a hard copy mailed to your school please make a note of this on the form, use the field 'instructions for SVHS'. Don't forget to provide the mailing address of your school.	
Not available unless: The activity Final Exam is marked complete	
Request a Transcript	
A transcript will list all courses you are taking with Silicon Valley High School. It includes all courses you have completed, as well as those that are in progress.	
Certificate of Completion	
Not available unless: The activity Final Exam is marked complete	