Algebra 1, Part 1

How To Take This Course

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. You will have access to the final exam when all of the unit tests are complete, and the assignments are completed and graded.

Please allow for 2-3 days per assignment for grading. Read the full course instructions so you understand how this course works.

- How This Course Works
- Instructions for the Course
- Ask The Teacher

  Meet your teacher for this course and ask a question.

Unit 1 Foundations of Algebra

In this unit we will learn:

- How to solve simple equations, and will work with more complex variables and expressions.
- How to write and simplify Algebraic expressions, involving basic functions with Real Numbers.
- How to analyze and combine like terms, and a mastery of powers and exponents, as well as roots and irrational numbers.

- 1.1 Variables & Expressions
  - 1.1 Quiz
- 1.2 Adding and Subtracting Real Numbers
  - 1.2 Quiz
- 1.3 Multiplying and Dividing Real Numbers
  - 1.3 Quiz
- 1.4 Powers and Exponents
  - 1.4 Quiz
- 1.5 Roots and Irrational Numbers
  - 1.5 Quiz
- 1.6 Properties of Real Numbers
  - 1.6 Quiz

1.7 Simplifying Expressions

1.7 Quiz

Unit 1 Assignment

Unit 2 Equations

In this unit we will learn:

- To move on from solving one step to two step equations, including equations in which the variable is on both sides.
- How to identify real life scenarios and express them as proportions.
- How to solve those proportions for the given variable using cross multiplication.
- How to use algebraic techniques to solve literal equations for a particular variable.
- How to solve and comprehend absolute value equations, showing that two solutions are likely in those scenarios.

2.1 Solving One Step Equations

2.1 Quiz

2.2 Solving Two Step Equations

2.2 Quiz

2.3 Solving Multi- Step Equations

2.3 Quiz

2.4 Solving Equations with Variables on Both Sides

2.4 Quiz

2.5 Solving Proportions

2.5 Quiz

2.6 Solving Literal Equations for a variable

2.6 Quiz

2.7 Solving Absolute-Value Equations

2.7 Quiz

Unit 2 Assignment

Unit 3 Inequalities

In this unit we will learn:

- How to take what was learned from solving and graphing linear equations and progress to graphing and writing inequalities.
- How to solve complex inequalities and to gain the understanding that there is no single solution, but rather a range of possible answers with inequalities.
- How to compare and contrast what is known about absolute value equations with absolute value inequalities, and how to graph the outcomes.

3.1 Graphing and Writing Inequalities

3.1 Quiz

3.2 Solving Inequalities by Adding or Subtracting

3.2 Quiz

3.3 Solving Inequalities by Multiplying or Dividing

3.3 Quiz

3.4 Solving Two Step and Multi-Step Inequalities

3.4 Quiz

3.5 Solving Inequalities with Variables on Both Sides

3.5 Quiz

3.6 Solving Compound Inequalities

3.6 Quiz

3.7 Solving Absolute-Value Inequalities

3.7 Quiz

Unit 3 Assignment

Unit 4 Functions

In this unit we will learn:

- How to spot and analyze relations andfunctions, understanding that not all relations are functions.
- How to write functions from real life scenarios and how to develop a deep understanding of graphing a “best line of fit” for scatter plots.
- How to calculate trend lines and to understand that they are an estimation in most cases.
- To take this understanding of functions and learn arithmetic sequences and their patterns.

4.1 Relations and Functions

4.1 Quiz

4.2 Writing Functions

4.2 Quiz

4.3 Scatter Plots and Trend Lines

4.3 Quiz

4.4 Arithmetic Sequence

4.4 Quiz

Unit 4 Assignment

Unit 5 Linear Functions

In this unit we will learn:

- How to identify and manipulate linearequations and functions, as well as match graphs to equations using key characteristics like intercepts, the slope, and positive or negative correlation.
- To able to switch between the intercept form and the point-slope form of algebraic equations and will understand when one form is more convenient than another, with regards to graphing.
- How to understand and be able to identify when two lines are parallel, perpendicular, or of no particular relationship, using the slopes of the two lines.

5.1 Linear Equations and Functions

5.1 Quiz

5.2 Using Intercepts

5.2 Quiz

5.3 Slope

5.3 Quiz

5.4 Direct Variation

5.4 Quiz

5.5 Slope- Intercept Form

5.5 Quiz

5.6 Point- Slope Form

5.6 Quiz

5.7 Slopes of Parallel and Perpendicular Lines

5.7 Quiz

Unit 5 Assignment

Unit 6 Systems of Equations and Inequalities

In this unit we will learn to:

- How to develop an understanding that two lines cross at a single point and how to incorporate prior knowledge of linear equations and inequalities to solve systems.
- How to solve systems of equations and inequalities using the graphing, substitution, and elimination methods, and how to identify which technique is more suitable for which scenario.
- How to solve special systems, including both consistent and inconsistent systems, and how to apply systems to real life scenarios.
- How to solve systems of inequalities and how to identify ranges of solutions that satisfy both linear inequalities in a system, and how to do the same for more than two inequalities at a time.

6.1 Solving Systems by Graphing

6.1 Quiz

6.2 Solving Systems by Substitution

6.2 Quiz

6.3 Solving Systems by Elimination

6.3 Quiz

6.4 Solving Special Systems

6.4 Quiz

6.5 Applying Systems

6.5 Quiz

6.6 Solving Linear Inequalities

6.6 Quiz

6.7 Solving Systems of Linear Inequalities

6.7 Quiz

Unit 6 Assignment

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. You must score 60% or higher in the final to receive credit for the course!

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 Exam

Course Completion

The "Certificate" and "Transcript Request" links below are not active, they cannot be accessed until you have achieved at least 60% on both the final and for the course total. Upon satisfying these two requirements, 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.

Restricted Not available unless:

- You achieve a required score in **Course total**
- You achieve a required score in **Final Exam**

Certificate of Completion

Restricted Not available unless:

- You achieve a required score in **Final Exam**
- You achieve a required score in **Course total**