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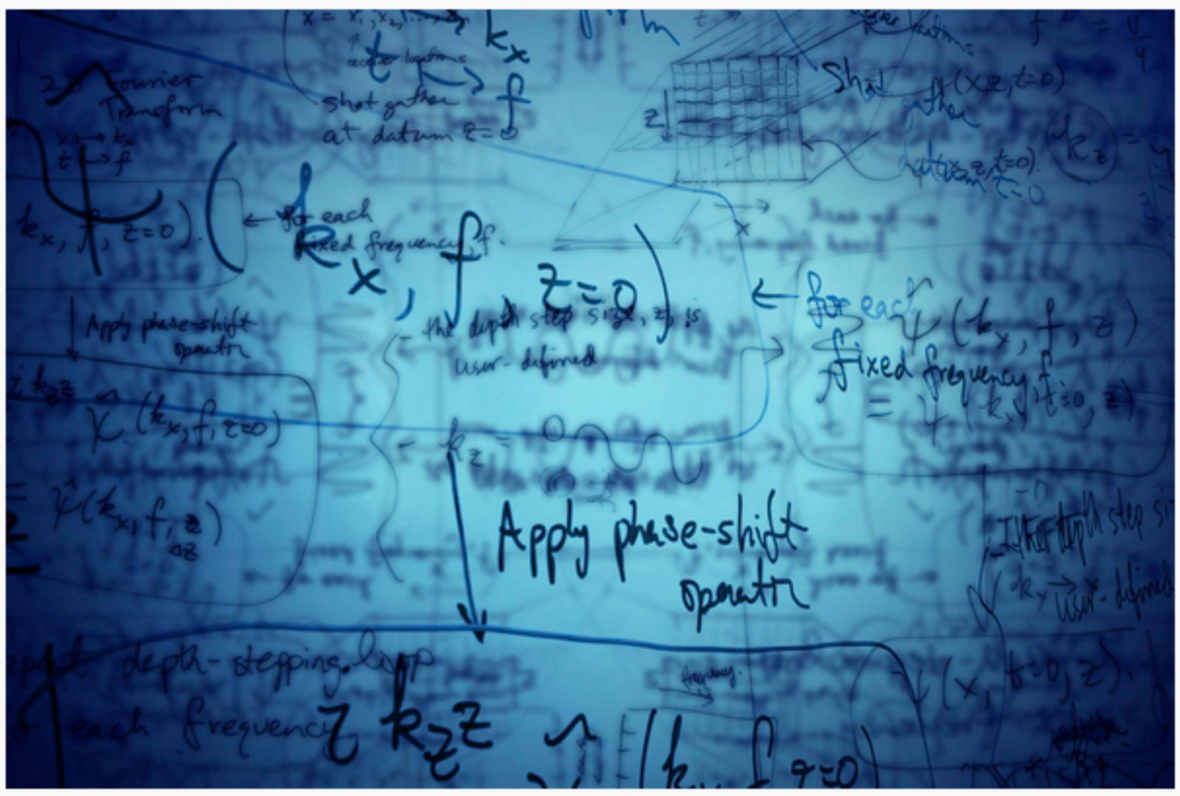
Algebra 1, Part 2



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 Exponents and Polynomials

In this unit we will learn:

- To explore and study integer exponents,including both positive and negative exponents, and how to recognize growth and decay patterns for each.
- How to recognize the power of a negative exponent to result in the inverse of its base and the implications of a graph of both positive and negative exponents.
- How to understand powers of 10 and how to use and understand scientific notation, applying scientific notation to figures from real life scenarios.
- How to understand and exercise multiplication and division properties of exponents, and how to readily exchange fractional exponents into root form and simplify them.
- How to simplify like terms, and how to add and subtract polynomials as well as how to multiply polynomials.
- How to find special products of binomials

1.1 Integer Exponents

- 1.1 Quiz

1.2 Powers of 10 and Scientific Notation

- 1.2 Quiz

1.3 Multiplication Properties of Exponents

- 1.3 Quiz

1.4 Division Properties of Exponents

- 1.4 Quiz

1.5 Fractional Exponents

1.5 Quiz

1.6 Polynomials

1.6 Quiz

1.7 Adding and Subtracting Polynomials

1.7 Quiz

1.8 Multiplying Polynomials

1.8 Quiz

1.9 Special Products of Binomials

1.9 Quiz

Unit 1 Assignment

Unit 2 Factoring Polynomials

In this unit we will learn:

- How to incorporate the understanding ofmultiplying and dividing polynomials into factoring polynomials, and how to master the reverse process of “undoing” the FOIL method, as well as other factoring techniques.
- How to identify the greatest common factors and factor using the GCF.
- To become fluent in identifying and factoring trinomials as well as special products, including the difference of square, difference and sum of cubes.
- How to quickly and efficiently determine the appropriate factoring method for the various factoring problems.

2.1 Factors and Greatest Common Factors

2.1 Quiz

2.2 Factoring by GCF

2.2 Quiz

2.3 Factoring ax^2 + bx + c

2.3 Quiz

2.4 Factoring Special Products

2.4 Quiz

2.5 Choosing a Factoring Method

2.5 Quiz

Unit 2 Assignment

Unit 3 Quadratic Functions and Equations

In this unit we will learn:

- To recognize the symmetric trends ofquadratic functions and how to solve quadratic equations.
- How to analyze and comprehend the characteristics of quadratic functions, including the identification of the vertex, the axis of symmetry, and the x and y intercepts.
- How to identify graphs of quadratic functions from their key characteristics and how to graph them using only the equation.
- How to solve quadratic equations using the graphing, factoring, square roots, and completing the square methods.
- To understand that there are three alternatives to quadratic equations; one solution, two solutions, and no solutions.
- How to master the quadratic formula to solve quadratics, as well as be able to use to use the discriminant to identify the nature of the roots.

3.1 Quadratic Equations and Functions

3.1 Quiz

3.2 Characteristics of Quadratic Equations

3.2 Quiz

3.3 Graphing Quadratic Functions

3.3 Quiz

3.4 Solving Quadratic Equations by Graphing

- 3.4 Quiz
- 3.5 Solving Quadratic Equations by Factoring
  - 3.5 Quiz
- 3.6 Solving Quadratic Equations by Using Square Roots
  - 3.6 Quiz
- 3.7 Solving Quadratic Equations by Completing the Square
  - 3.7 Quiz
- 3.8 The Quadratic Formula
  - 3.8 Quiz
- 3.9 The Discriminant
  - 3.9 Quiz
- Unit 3 Assignment

Unit 4 Rational Functions and Equations

In this unit we will learn:

- To identify the types of variation from reallife scenarios, including both direct and inverse variation, and how to master writing variation equations to use for modeling outcomes.
- To solve rational functions and how to become fluent at simplifying rational expressions.
- How to multiply and divide rational expressions and use these skills, as well how to add and subtract rational expressions to solve for solutions.
- How to divide rational polynomials and how to solve rational expressions involving complex polynomials.

- 4.1 Inverse Variation
  - 4.1 Quiz
- 4.2 Rational Functions
  - 4.2 Quiz
- 4.3 Simplifying Rational Expressions
  - 4.3 Quiz
- 4.4 Multiplying and Dividing Rational Expressions
  - 4.4 Quiz
- 4.5 Adding and Subtracting Rational Expressions
  - 4.5 Quiz
- 4.6 Dividing Rational Polynomials
  - 4.6 Quiz
- 4.7 Solving Rational Equations
  - 4.7 Quiz
- Unit 4 Assignment

Unit 5 Radical and Exponential Functions

In this unit we will learn:

- The fundamental characteristics of square root functions, including domain and range restrictions.
- To recognize basic functions of radica expressions, including how to simplify, add, and subtract them.
- How to solve radical equations by performing reverse operations to isolate the variable.
- To recognize geometric sequences, including their growth or decay patterns, and their graphs.
- To understand exponential functions and how to differentiate between linear, quadratic, and exponential models.

- 5.1 Square- Root Functions
  - 5.1 Quiz
- 5.2 Radical Expressions

5.2 Quiz

5.3 Adding and Subtracting Radical Expressions

5.3 Quiz

5.4 Solving Radical Equations

5.4 Quiz

5.5 Geometric Sequence

5.5 Quiz

5.6 Exponential Functions

5.6 Quiz

5.7 Linear, Quadratic, and Exponential Models

5.7 Quiz

Unit 5 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**