

Algebra 2, Part 1

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ATTENTION

Grading at the end of the semester can take 7 school days!
Submit your **last assignment two weeks** before your school's semester ends.



The prerequisites for this course are: Algebra 1 and Geometry

How to Take This Course

Each unit includes guided notes that align with the lesson videos. The lesson quizzes, unit tests, and final exam are all based on the content covered in these videos. Most lessons also include links to optional resources or practice assignments. You're encouraged to explore these additional materials if you'd like extra support or more practice on specific topics.

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 after you have been enrolled in the course for at least 30 days, all unit tests are completed, and your assignments are graded.

Allow 3-4 school days for an assignment to be graded. To understand the course grading, read the full course instructions.


 [How This Course Works & Suggested](#)

 [Submitting Your Assignments](#)

 [Ask The Teacher](#)

Meet your teacher for this course and ask a question.

Need help with the course? We offer online tutoring; find more details about it [here](#).

 MANDATORY QUIZ ▼ Done ▼

assignments" document, watch the video on the how this course works page and review the suggested timeline.

- ## Unit 1: Linear Equations, Inequalities, and Systems

In this unit, you will















 - Solve multi-step linear equations and inequalities, including those with absolute values.
 - Analyze and graph linear equations and inequalities using slope, intercepts, and standard forms.
 - Write linear equations given points, slopes, or contextual information, and interpret parallel and perpendicular relationships.
 - Solve systems of equations and inequalities using graphing, substitution, and elimination methods.
 - Apply systems of inequalities and linear programming to optimize real-world scenarios.

Unit 1 Guided Notes


- Quiz 1.1 To do ▾

 1.2 Solving Absolute Value Equations and Inequalities


 Quiz 1.2 To do ▾


	1.2 Slope and Writing Linear Equations	
	Quiz 1.3	To do ▾
	1.4 Graphing Linear Equations and Inequalities	
	Quiz 1.4	To do ▾
	1.5 Solving Systems of Equations Graphically	
	Quiz 1.5	To do ▾
	1.6 Solving Systems of Equations Algebraically	
	Quiz 1.6	To do ▾
	1.7 Solving Systems of Inequalities	
	Quiz 1.7	To do ▾
	1.8 Linear Programming	
	Quiz 1.8	To do ▾
	Unit 1 Assignment: Behind the Scenes at Apex Adventure Park	To do ▾
	Unit 2: Advanced Systems and Matrices	
In this unit, you will		


- Solve systems of linear equations in three variables using substitution and elimination.
- Perform operations with matrices, including addition, subtraction, scalar multiplication, and matrix multiplication.
- Calculate determinants and use Cramer's Rule to solve systems of equations.
- Find the inverse of 2×2 matrices and use inverse matrices to solve systems.
- Solve systems of equations using augmented matrices, Gaussian elimination, and Gauss-Jordan elimination.


 [Unit 2 Guided Notes](#)


These guided notes correspond to the instructional videos. You may use them on the unit quizzes, unit tests, and course final.


 [2.1 Systems of Equations in Three Variables](#)


 Quiz 2.1 To do ▾


 [2.2 Matrix Operations](#)


 Quiz 2.2 To do ▾


 [2.3 Matrix Multiplication](#)


 Quiz 2.3 To do ▾


 [2.4 Determinants](#)

 Quiz 2.4 To do ▾


 [2.5 Cramer's Rule](#)


 Quiz 2.5 To do ▾

 [2.6 Inverses of \$2 \times 2\$ Matrices](#)


 Quiz 2.6

To do ▾


 2.7 Solving Systems Using Matrices

 Quiz 2.7

To do ▾


 Unit 2 Assignment: Swim Meet Matrix

To do ▾


 Unit 3: Functions


In this unit, you will

- Explore the concept of functions, including domain, range, continuity, and function notation.
- Analyze function graphs to identify key features such as intercepts, extrema, intervals of increase/decrease, and end behavior.
- Interpret, sketch, and transform various parent functions and piecewise-defined functions.
- Perform operations with functions, including composition, and classify functions as even, odd, or neither.
- Find and verify inverse functions algebraically and graphically.


 Unit 3 Guided Notes














These guided notes correspond to the instructional videos. You may use them on the unit quizzes, unit tests, and course final.

 3.1 Functions and Continuity

 Quiz 3.1


To do ▾

 3.2 Features of Functions


 3.3 Sketching Graphs of Functions	
 Quiz 3.3	To do ▾
 3.4 Piecewise Functions	
 Quiz 3.4	To do ▾
 3.5 Parent Functions and Transformations	
 Quiz 3.5	To do ▾
 3.6 Operations on Functions	
 Quiz 3.6	To do ▾
 3.7 Even and Odd Functions	
 Quiz 3.7	To do ▾
 3.8 Inverse Relations and Functions	
 Quiz 3.8	To do ▾
 Unit 3 Assignment: Characteristics of Functions Video Project	To do ▾


In this unit, you will


- Analyze quadratic functions in various forms to identify key features such as vertex, axis of symmetry, and maximum or minimum values.
- Solve quadratic equations using multiple methods including graphing, factoring, completing the square, and the quadratic formula.
- Perform operations with complex numbers, including simplifying, adding, subtracting, multiplying, and dividing.
- Model real-world scenarios with quadratic functions using regression and interpret their graphs and solutions.
- Graph and solve quadratic inequalities and systems involving linear and quadratic equations.


 Unit 4 Guided Notes


These guided notes correspond to the instructional videos. You may use them on the unit quizzes, unit tests, and course final.


 4.1 Quadratic Functions


 Quiz 4.1 To do ▾


 4.2 Solving Quadratic Equations by Graphing












 Quiz 4.2 To do ▾














 4.3 Complex Numbers


 Quiz 4.3 To do ▾

 4.4 Solving Quadratic Equations by Factoring


 Quiz 4.4 To do ▾

	Quiz 4.5	To do ▾
	4.6 The Quadratic Formula and the Discriminant	
	Quiz 4.6	To do ▾
	4.7 Curve Fitting with Quadratic Models	
	Quiz 4.7	To do ▾
	4.8 Quadratic Inequalities	
	Quiz 4.8	To do ▾
	4.9 Linear-Quadratic Systems	
	Quiz 4.9	To do ▾
	Unit 4 Assignment: The Quadratic Selfie	To do ▾
<hr/>		
	Unit 5: Polynomial Functions	
In this unit, you will		
<ul style="list-style-type: none">◦ Perform operations with polynomials and apply exponent rules to simplify expressions.◦ Graph polynomial functions and analyze their end behavior, turning points, and key features.◦ Factor polynomials completely using a variety of techniques, including special products and factoring by grouping.◦ Solve polynomial equations algebraically and graphically, and interpret their solutions.		

expansions.	
 Unit 5 Guided Notes	
These guided notes correspond to the instructional videos. You may use them on the unit quizzes, unit tests, and course final.	
 5.1 Operations with Polynomials	
 Quiz 5.1	To do ▾
 5.2 Graphing Polynomial Functions	
 Quiz 5.2	To do ▾
 5.3 Factoring Polynomials	
 Quiz 5.3	To do ▾
 5.4 Dividing Polynomials	
 Quiz 5.4	To do ▾
 5.5 Solving Polynomial Equations by Graphing	
 Quiz 5.5	To do ▾
 5.6 Solving Polynomial Equations Algebraically	
 Quiz 5.6	To do ▾




5.7 Zeros and Roots of Polynomial Functions




Quiz 5.7

To do ▾




5.8 Pascal's Triangle and the Binomial Theorem




Quiz 5.8

To do ▾



Unit 5 Assignment: Polynomial Division and Roots

To do ▾




Final Exam

You will have access to the final after you have been enrolled in the course for at least 30 days and when all unit tests are completed, and [your assignments are graded](#).


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.

Remember, if you want to improve your grade in this course, you need to do that BEFORE you take the final exam.

Good Luck!!



Practice Final



Course Completion & Requesting a Transcript


Warning - If you are waiting for a resubmitted assignment to be graded, do NOT generate any course completion record until the teacher has graded it.

Transcript - Send a transcript to your school to report the credits you earned. A transcript will list all the courses you have taken


With us, including those still in progress.

Course Certificate - This link cannot be accessed until you have completed the final. Upon satisfying this requirement, the link will become active.


Feedback - 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 Transcript](#)

Notify your school that you have completed your course. Send them a transcript by email or mail. A transcript will list all the courses you have completed and those in progress.

 [Certificate of Completion](#)

 Not available unless: The activity **Final Exam** is marked complete