Algebra 2 LIVE Class Sessions

Fall 2025: Mon 11am Pacific (2pm Eastern) – 60 min

SUPERCHARGED MATH

Date	Week	Ch.	Topic	Section
9/08	1	1.1	Session #1: Equations & Inequalities	Linear Equations
		1.2		Quadratic Equations
9/15	2	1.3		Complex Numbers
		1.4		Radical Equations
9/22	3	1.5		Solving Inequalities
		1.6		Absolute Value
9/29	4	2.1	Session #2: Graphs	Distance & Midpoint
		2.2		Graphs of Equations
10/06	5	2.3		Lines
		2.4		Circles
10/13	6	2.5		Variation
		p.197		Review & Test
10/20	7	3.1	Session #3: Functions & Graphs	Functions
		3.2		Graphs
10/27	8	3.3-3.4		Properties of Functions
		3.5		Transformations
11/03	9	3.6		Building Functions
		p. 273		Review & Test
11/10	10	4.1	Linear & Quadratic Functions	Linear Function Properties
		4.2		Building Models from Data
11/17	11	4.3		Quadratic Functions
		4.4		Building Models from Data
11/24	12	4.5		Quadratic Inequalities
		p. 329		Project
12/02		p. 325		Review & Test
12/09	*No class due to Winter Break!*			

A Textbook is required for this course: This book includes additional course materials online by the publisher which contains graphing utilities, answers to check points, chapter test prep videos, objective videos, cumulative reviews and more. Be sure to sign up for your online access from the publisher when you get your textbook. *Algebra & Trigonometry, 12th edition by Sullivan.*

Important Dates:

- First Day of Class: Sept 8
- Last Day of Class: May 25
- No class 12/6-1/3 (Winter Break) & 3/23-27 (Spring Break)

NOTE: This is the first half of a two-year course. Students will progress to the second half of the course, Trigonometry/Pre-Calculus, next year. We will use the same textbook for both years.

Algebra 2 Course Outline

Date	Week	Ch.	Topic	Homework/Handouts	Score
9/08	1	1.1	Linear Equations		
		1.2	Quadratic Equations		
9/15	2	1.3	Complex Numbers		
		1.4	Radical Equations		
9/22	3	1.5	Solving Inequalities		
		1.6	Absolute Value		
9/29	4	2.1	Distance & Midpoint		
		2.2	Graphs of Equations		
10/06	5	2.3	Lines		
		2.4	Circles		
10/13	6	2.5	Variation		
		p.197	Review & Test		
10/20	7	3.1	Functions		
		3.2	Graphs		
10/27	8	3.3-3.4	Properties of Functions		
		3.5	Transformations		
11/03	9	3.6	Building Functions		
		p. 273	Review & Test		
11/10	10	4.1	Linear Function Properties		
		4.2	Building Models from Data		
11/17	11	4.3	Quadratic Functions		
		4.4	Building Models from Data		
11/24	12	4.5	Quadratic Inequalities		
		p. 329	Project		
12/02		p. 325	Review & Test		
12/09	*No class due to Winter Break!*				

Algebra 2 Course Outline

Date	Week	Ch.	Topic	Homework/Handouts	Score
1/05	13	5.1	Polynomial Functions		
		5.2	Graphing Polynomials		
1/12	14	5.3	Rational Functions		
		5.4	Graphing Rational Fcns		
1/19	15	5.5	Inequalities		
1/26	16	5.6	Real Zeros		
		5.7	Complex Zeros		
2/02	17	p. 408	Review & Test		
2/09	18	6.1	Composite Functions		
		6.2	Inverse Functions		
2/16	19	6.3	Exponential Functions		
2/23	20	6.4	Logarithmic Functions		
3/02	21	6.5	Properties of Logarithms		
3/09	22	6.6	Logs & Exp Functions		
3/16	23	6.7-6.9	Modeling with Data		
			Review & Test		
3/23	*No class due to Spring Break!*				
3/30	24	12.1	Systems of Linear Eq		
4/06	25	12.2	Matrices		
4/13	26	12.3	Determinants		
4/20	27	12.4	Matrix Algebra		
4/27	28	12.5	Partial Fraction Decomp		
5/04	29	12.6	Systems of Nonlinear Eq		
5/11	30	12.7	Systems of Inequalities		
5/18		p. 957	Review & Test		

About this Course: This is a standard High School Algebra 2 course with a strong emphasis on STEM and project-based learning. Students will build on their algebra skills by learning linear and quadratic equations, complex numbers, solving inequalities; study functions like polynomial, rational, exponential, and logarithmic; and use them in real-life situations.

The course also covers graphing lines and circles, systems of equations, and financial models. By the end, students will have a strong algebra foundation, preparing them for pre-Calculus, Calculus and beyond.

How This Course Works: Lessons with a teacher are about 30 minutes long, not hurried or rushed, and are completed fully before moving on to the next lesson. Math homework should take 30-60 minutes each day in addition to the class lesson, so plan to spend 30-90 minutes on math each day, five days every week. Do not skip a day.

In Class:

- First 5-10 minutes: teacher introduces a new math concept
- Next 10-20 minutes: students take notes in class while the teacher is demonstrating the skill through example problems
- Final 10-20 minutes: students start on the homework so the teacher can answer questions before they leave class for the day (in a live class).

After Class:

- Students continue to work on homework immediately following class
- Optional: Students may attend the Study Hall with a teacher
- Students continue with assignments on days without a teacher lesson (these will be homework assignments of exercises, projects, and activities)
- Important: don't cram, and only do one lesson each day. Do double-up and don't rush. Students should feel relaxed enough to think about assignments and relating math concepts to those already learned.

Materials Required:

- Pencil and paper
- Graph paper and lined paper
- Ruler and protractor
- Ti-84 Graphing Calculator (color display not required)
- Text: This Student Workbook!
- Software: Desmos (free)

Grading Policy: Every assignment has a step-by-step walkthrough video and fully worked out solutions in the answer key. Assignments are not completed unless all answers are checked, and all mistakes are corrected. Only after this will assignments be marked as complete. Each problem is worth either <u>one point if correct</u> *or* <u>½ point</u> (if incorrect by then you corrected the mistake).

Class Expectations: Students are actively engaged the entire time. Class lessons are short, so you'll need to make the most out of your time with the teacher lesson. Here's what it looks like:

1. Students have their workbook out, pencil in hand, and calculator at the ready. (Students work in a physical workbook, not with digitized media.)
2. Students have turned off cell phones, media, and other distractions.
3. Students are doing what is asked on the video (live or recorded). Students that progress the quickest rewatch (after a live class) and pause the video, making sure they are thinking and working through the concepts in their notes and homework.
4. Students copy down exactly as the teacher instructs, every single time. They don't shortcut, and they don't do the math only in their head. Students train themselves to think using the methods that the teacher outlines in the lesson.
5. Students must do the work themselves. They don't learn by passively watching someone else solve math problems, they need to actively think and perform the work required for class to make progress throughout the year.

Course Expectations: Math is not just about getting the right answer—it's about showing the reasoning behind it in a way others can understand.

1. Whether explaining a problem to a teacher, collaborating with peers, or preparing for real-world applications, students need to present their work in an organized and structured manner. This clarity helps others see their thought process, verify their understanding, and confirm that they have mastered the skill or assignment.
2. When students clearly write out their steps, they reinforce their own understanding and are more likely to catch mistakes. Strong math communication ensures that students don't just memorize procedures but truly grasp concepts and can apply them correctly. All work done by the student follows these guidelines.
3. Math can't be learned in a vacuum or by reading a textbook alone. Students need to be actively engaged with peers, projects, and activities to bring these concepts to life.

Communications: If you're stuck on a math problem, don't wait too long to ask for help—reach out to your teacher as soon as possible. Getting support early will keep you from feeling frustrated and help you stay on track with the material.

Tutoring / Study Hall: We offer an optional small group private tutoring session for students that need additional help during the week. Please ask about how to enroll if interest

Best MATH Practices

We're so glad you're here! Whether you're just starting out or picking up where you left off, this is the perfect place to grow, explore, and discover how fun learning can be. Here are my best tips for learning math the easy way!

📚 Understand, Don't Memorize
Focus on *why* the math works, not just plugging in numbers into formulas.

🧠 Practice Actively, Not Passively
Do problems *yourself* – watching someone else isn't enough.

📈 Build Conceptual Foundations
Make sure you're solid on earlier topics (fractions, equations, etc.) because math builds on itself, and if you skip a step, it's going to be harder later.

🔄 Review Regularly
Don't cram. Practice each day to move math concepts to your long-term memory.

📝 Show All Your Work
Write all steps clearly and neatly, usually this means writing *larger* than you usually do. This helps catch mistakes and makes reviewing easier later when you go back through your notes.

🧩 Solve Word Problems
Math isn't about getting the right answer. We're learning to apply these concepts to real-life situations to build problem-solving skills.

📊 Use Visual Aids
Use graphs, charts, number lines, and diagrams help you understand abstract ideas. Most of your time should be spent *understanding* the problem, more than doing the actual steps to solving.

👥 Work with Someone Else
Working with others helps you learn math better because you get exposed to different problem-solving approaches though discussions and explanations. You'll build confidence while learning in a more engaging, fun, and interactive way!

🧮 Use Tools Wisely
Use calculators, apps, and manipulatives help you *to understand*, not to bypass thinking. Don't be over-dependent on the solution videos for the math assignments, only use them when you're really stuck on a problem.

📌 Stay Curious and Ask *Why*
We love curiosity! Keep asking questions like: *"Why does this work?"* and *"What happens if I change this?"* You'll understand deeper the more thought you put into it.