COURSE OVERVIEW

Course Title: Pre-Calculus (honors)

Teacher: Liz Darnell

I bring my 25+ years as a math teacher, Saxon training, and experience to the classroom. I encourage unique problem-solving perspectives but will train all students in solid and consistent math strategies that they will be able to build on.

Contact Information:

Phone: 407-468-5055. (You can text me)

Email: liz@wearetherockofcf.org

The best time to reach me is: Monday, Wednesday, & Friday afternoons. Check my SETMORE site to schedule an appointment. https://therockacademy.setmore.com/

Course Overview

This course is a **rigorous** Pre-Calculus course based on the Algebra 1, 2, and Geometry skills previously studied. The course continues using incremental development (introducing a wide variety of topics in small pieces) and continual review (repeating skills daily over a period of time until students retain the concepts). Students who are secure in their understanding and application of Algebra II and Geometry skills are more likely to be successful in this upper math class.

Students will be responsible for being present for class, participating in the teaching/learning process, having their homework graded, completed, and turned in on time, asking questions, and requesting help as needed.

Students will be provided with interactive, in-class teaching, weekly videos for reinforcement if needed, and Guided Study time to complete all assignments. If more assistance is necessary, parents may need to hire a private tutor. Please contact me if your student is struggling.

Goals: Each student will be able to:

- Achieve independent mastery of the Math skills taught
- Hone their problem-solving skills as it relates to math and other areas of life
- Take on the challenge of math and overcome deficits and/or fear of the subject
- See the beauty of Intelligent Design in all facets of their math experience
- Improve their time management and organizational skills
- Be prepared for standardized testing as well as future math courses

The Rock ACADEMY

Pre-Calculus Course Overview

Semester I Weekly Overview	Semester II Weekly Overview
Week 1 – Lessons 1, 2, & 3—Geometry Review; Pythagorean Theorem	**Week 19** – Lessons 59, 60, 62—Advanced Log Problems; Factorable Trig Equations; Linear Variation
Week 2 – Lessons 5, 6, & 8—Exponents; Radicals; Complex Numbers; Fractions; Systems of Equations; Angle Bisectors	**Week 20** – Lessons 63, 64, 65—Circles & Completing the Square; Polar Form of a Complex Number; Radicals in Trig Equations; Graphs of Log Functions
Week 3 – Lessons 9 & 10—Congruent Figures; Equation of a Line; Completing the Square **TEST 1**	**Week 21** – Lessons 66, 67, 68, 69—Phase Shifts; Antilogs; Translated Parabolas; Derivation; Matrices
Week 4 – Lessons 11, 12, & 13—Circles; Quadratic Formula; Angles/Diagonals in Polygons; Secants; Tangents	**Week 22** – Lessons 71, 72, 73—The Ellipse; Law of Sines; Regular Polygons **TEST 16**
Week 5 – Review; Practice Test; **TEST 2**	**Week 23** – Lessons 74, 76, 77—Cramer's Rule; Trig Identities; Binomial Expansion **QUIZ 3.1**
Week 6 –Lessons 14, 16, & 18 —Sine, Cosine, Tangent; Angles of Elevation & Depression; Polar Coordinates; Division of Polynomials; Advanced Word Problems	**Week 24** – Lessons 78, 79, 80—The Hyperbola; De Moivre's; Trig Identities Part 2 **QUIZ 3.2**
Week 7 – Lessons 19, 20, & 21— Non-Linear Systems; Sum & Diff of Cubes; Special Triangles; Functions **Quiz 1.1**	**Week 25** – Lessons 81, 82, 83—Law of Cosines; Exponential Equation; Simple Probability **TEST 19**
Week 8 – Lessons 22, 23, & 24—Absolute Value; Exponential Functions; Sums of Trig Functions **QUIZ**	**Week 26** – Lessons 84, 85, 86—Factorable Expressions; Trig Equations; Arithmetic Progressions and Mean
Week 9 – Lessons 25, 26, 27 –Logarithmic Equations; Related Angles; Signs of Trig Functions **TEST 5 Notebooks Due**	**Week 27** – Lessons 87, 88 89—Additional Identities; Exponential Growth & Decay; The Ellipse **TEST 21 Notebooks Due**
Week 10 – Lessons 28, 29, 30, 31—Factorial Notation; Unit Circle; Quadrantal Angles; Adding Vectors; Symmetry, Reflections; Translations	**Week 28** – Lesson 90, 91, 93—Double & Half Angle Identities; Geometric Progressions; Triangle Inequalities;
Week 11 – Lessons 32, 33, 34 & 35—Inverse Functions; Unit Circle; Summation Notation; Distance Formula **TEST 7**	**Week 29** – Lessons 94, 96, 98—Review; Change of Base; **QUIZ 4.1**
Week 12 – Lessons 36, 37, 38—Angles Greater Than 360; Line as Locus; Midpoint; Permutations; Designated Roots	**Week 30** – Lessons 106, 112, 113—Hyperbolas & Ellipses; Binomial Theorem; Synthetic Division; Zeros & Roots
Week 13 – Lessons 39, & 40—Radians; Linear Equations; Laws of Logs **TEST 9**	**Week 31** – Lessons 114, 115—Graphs of Factored Polynomials **QUIZ 4.2**
Week 14 – Lessons 41, 42, 43—Reciprocal Trig Functions; Conic Section	**Week 32** – Lessons 116, 117— The Region of Interest; Rational Roots Theorem **QUIZ 4.3**
Week 15 – Lesson 46 Complex Roots; Factoring Over Complex Numbers **TEST 10. Thanksgiving Break**	**Week 33** –Lessons 118, 119—Roots of Polynomial Equations; DeCartes Rule of Signs; Bounds; **Polynomial Test**
Week 16 – Lessons 47, 48, 49, 50—Vertical Sinusoid Translations; Arctan; Powers of Trig Functions; Perp Bisectors; Rules of Logarithms; Trig Equations	**Week 34** – Lessons 121, 122 –Piecewise Functions; Greatest Integer Function; **QUIZ 4.4**
Week 17 – Lessons 51, 52, 53, 54 –Logarithms; Arguments in Trig Equations; Angular Velocity; Parabolas	**Week 35** – Graphing Polynomials Review and PRACTICE
Week 18 – Lessons 56, 57, 58—Systems of Inequalities; Phase Shifts; Periods; Distance from Point to Line **TEST 12 Notebooks Due**	**Week 36** – Review; **Polynomial TEST. Notebook Due**

This schedule is an overview. TRA reserves the right to make changes during the school year.

The Rock ACADEMY

Pre-Calculus Course Overview

Supplies Needed for this Course

- Saxon Advanced Math (GREEN) Textbook 2nd or 3rd Edition
- Solutions Manual or Answer Key
- Scientific Calculator (not graphing—typically around $10)
- 1.5" 3-Ring Binder with 3 dividers
- General Supplies: Pencils, Erasers, Ruler, Paper, (Lined and Graph Paper)

The Classroom:

- Class starts on time. Tardies and Absences will be recorded
- Students are to come to class PREPARED with their previous homework completed and scored
- Class will include review of previous concepts, and the introduction of new material using a variety of presentations (visual, aural, and tactile) encouraging participation in the process
- Students will practice in class, ask questions, and work together
- Students will clearly know what is expected of them throughout the week based on the Assignment Sheet provided
- Students have access to assistance in class, Guided Study and Math Lab throughout the week.

At Home or Guided Study

- Have an organized workspace and know where your supplies are
- Put your finished work IN YOUR NOTEBOOK to bring to class
- Have a schedule for completing your daily work
- Mark your Assignment Sheet when a lesson is completed

How to Get an 'A' in this Class:

- Follow directions!
- Be prepared for class
- Ask for help when needed
- Be neat—or be working on being neater and more organized
- Keep up with the assignments and turn things in ON TIME
- Prepare for tests and take them seriously—Always do your best
- Take advantage of the resources provided and show that you are serious about succeeding

Extra Credit:

- May or may NOT be offered each quarter
- Is not to bail out a student if they have not followed the procedures for the quarter
- When offered, is optional and is only counted in the overall grade if it helps a student's grade.

Absence and Late Work Policies

See your FACTS Agreement for these policies. I WILL NOT accept any homework that is over 2 class periods late unless it has been worked out prior with me. **There are no exceptions to this rule!** You must text, email or speak to me to work out a new assignment date for sickness, vacations, or any other EXCUSED ABSENCES.

Expectations

You may expect the Teacher to:

- Be prepared, on time and fair in the classroom.
- Post grades in a consistent and timely manner to FACTS
- Respond to phone or email messages within 24 hours.
- Be available for conferences or discussions per appointment. Please text or use Setmore Site.
- Work hard to see every student succeed.
- Be available by text or email to answer questions or concerns.

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I will expect the Parents to:

- Be aware of the current assignments for their students.
- Oversee the work at home (even if your child is in Guided Study), making sure that students complete the assignments and have their materials ready to turn in
- Provide the materials the students need to be successful in this class.
- Proctor the Take-Home Tests, signing and sealing them to be returned to class
- Contact the teacher if there are any problems ASAP
- **Check grades AT LEAST every week** on FACTS to see how their child is doing! This is IMPERATIVE.

I will expect the Student to:

- Be polite and always have good manners! (See the Code of Conduct)
- Keep current with all assignments.
- Work on keeping organized and neat
- Do all their own work with honesty and integrity
- Ask questions and ask for help when they need it.
- ALWAYS be prepared for class, that includes course material, paper, and writing utensils.
- Check FACTS regularly to see how they are doing.