The *Rock*
ACADEMY

Courses: Pre-Calculus

Teacher: Liz Darnell

Contact Information:
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> The best time to reach me is: Wednesday-Friday business hours

Materials Supplies Needed for this Courses:
Students MUST have the following:
- Textbooks (Saxon Advanced Math—green book 2_{nd} edition) and Solutions Manual
- Scientific Calculator (does not need to be a graphing calculator!)
- 3-ring Binder (1.5 " or 2")
- 3 Tab Dividers Labeled: 1) Notes/Handouts 2) Homework 3) Tests/Quizzes
- Graph Paper, Notebook Paper, Pencils
- Straight Edge (ruler or protractor)
- Compass, Protractor

My Goals are that each student would:
- become critical thinkers and competent problem solvers
- hone their math skills and build confidence
- be prepared for college entrance exams such as the SAT or ACT
- see the beauty and precision of our Designer in the complexities of the math

What you can expect of the Teacher:
- I will be professional, prepared, and on time.
- I will be available to you, the parent, so that our partnership will be successful.
- I will be attentive to each student and seek to develop their unique perspective as it pertains to problem solving as well as challenge them to achieve beyond what they have ever thought possible.

What I expect of Parents:
I need Parents to:
- assist students in keeping up with the syllabus so that the work is turned in on time every week
- grade the daily homework and mark the numbers wrong across the top of the page
- check PRAXI AT LEAST once per week and review your child's progress
- provide the necessary assistance when a student struggles (suggestions would be: 1. Help them with homework; 2. Bring them to Math Lab; 3. Hire a private tutor if necessary)
- occasionally proctor tests, online tests, and quizzes (This means making sure that they take these assessments with integrity and NO outside assistance.)

High School Math Course Overview

What I expect of Students
Students will:

- complete the weekly lessons and turn them in on time
- ask questions and participate actively in class—PLEASE contact me if you need help!
- come to Math Lab when extra assistance is necessary
- not associate their worth with a letter grade   Self-esteem should NOT be tied to letter grades. Studying math can be a great experience in tackling a challenge, learning perseverance, and maintaining a great attitude. All of these are terrific benefits regardless of individual letter grades on assignments and assessments. As a strong work ethic is applied skill level WILL go up.

Grading:

Grades are given to a variety of assessments, tasks, and projects. ONE low grade will NOT sink your academic ship—so don't lose heart if you get a poor grade on an assessment. It is important that students do well on tests and those students independently master the concepts.
Grades are weighted as follows:

- **75% Tests and Quizzes   20% Homework** (5 points per assignment)   **5% Notebook**

 EXTRA CREDIT is NOT always offered. Students who do not follow the directions for homework will NOT be given an opportunity for extra credit.

How to Get an 'A' in this Class:

- Turn your completed and graded homework in ON TIME!
- Keep a great notebook.
- Show your work (where applicable) and work toward developing the processes necessary to do upper math.
- Work consistently every day. Do not make it a habit to let your homework pile up or do it all in one day.
- Get help when you need it.

Absences:

The TRA Policy is to give students one extra class period to turn in work due to an EXCUSED absence.
If you should need more time to get caught up, it is up to the parent to contact the teacher and work out additional due dates.   **Assignments that are 2 weeks past the original due date are given zeros.**
Unexcused absences include, but are not limited to: sleeping in and not contacting the school in advance in writing for a planned absence. (There is a Planned Absence Form that MUST be filled out in advance.) **You can lose your seat in the class if you miss more than 4 classes.**

TESTS

Some tests are proctored at home and some are given online or in class. Approximately 4 assessments are scheduled per quarter.   **Students in Guided Study or Study Hall MAY be able to test if there is a suitable environment and a proctor available.**
The lowest test of each semester **MAY be dropped**, but tests that were given a zero because they were not turned in **will NOT be dropped**.
Cheating is grounds for dismissal from the class and/or school. Students are not to receive any outside assistance during a test.

Honors Options: Students may take Algebra I at the Honors Level as follows:

- Being tested at all Assessments with the Honors Tests and a project each semester
- They will do all of the Uniform Motion Problems and be proficient with Quadratic Formula
- Doing outstanding, consistent work on all Homework and Assignments—following directions, **showing work** (*Students who do not show work cannot get an honors credit.*)
- Turning in assignments on time (*Students who are chronically late cannot get an honors credit.*)

High School Math Course Overview

Course: Pre-Calculus Week-by-Week *			
Semester I		Semester II	
1	**Lessons 1-3** (Geometry Review; Area; Cylinders, Prisms, Cones, Pyramids; Pythagorean Theorem, Similar Polygons,)	**19**	**Lessons 61-63** (The Normal Distribution; Abstract Coefficients, Linear Variation; Circles and Completing the Square)
2	**Lessons 4-6** (Construction, Exponents and raicals, Complex Numbrs, Geometric Figures)	**20**	**Lessons 64-67** (Complex Plane, Polar Form, Sums and Products of Complex Numbers; Radicals in Trig Equations; Graphs of Log Functions; Formulas, Phase Shifts and Period Changes; Antilogarithms)
3	**Lessons 7-9** (Logic, Inductive and Deductive Reasoning, Proportional Segments, Angle Bisectors and Side Ratios; Congruent Figures)	**21**	**Lessons 68-70** (Locus Definition of Parabola, Translated Parabolas; Applications, Derivations; Matrices; Determinants; Percentiles and Z Scores)
4	**Lessons 10-13** (Equation of a Line; Rational Denominators, Completing the Square; Circles, Quadratic Formula; Angles and Diagonals in Polygons; Intersecting Secants)	**22**	**Lessons 71-74** (The Ellipse; Law of Sines; Regular Polygons; Cramer's Rule)
5	**Lessons 14-17** (Sine, Cosine, Tangent, Angles of Elevation & Depression, Polar Form, Proofs; Complex Fractions, Division of Polynomials)	**23**	**Lessons 75-77** (Combinations; Trig Identities; Binomial Expansion)
6	**Lessons 18-21** (Advanced Word Problems, Nonlinear Systems, Factoring Exponentials, Sum/Diff of Two Cubes; Special Triangles; Functions)	**24**	**Lessons 78-81** (The Hyperbola; De Moivre's Theorem, Roots of Complex Numbers; Trig Identities; Law of Cosines)
7	**Lessons 22-24** (Absolute Value, Reciprocal Functions; Exponential Functions; Combining Functions, Sums of Trig Functions)	**25**	**Lessons 82-84** (More on Logs, Exponential Equations; Simple Probability, Independent Events, Replacement; Factorable Expressions, Sketching Sinusoids)
8	**Lessons 25-28** (Age & Rate Problems; Logarithmic Form and Equations; Related Angles, Signs of Trig Functions; Factorial Notation, Abstract Rate Problems)	**26**	**Lessons 85-88** (Advanced Trig Equations; Clock Problems; Arithmetic Progressions and Means; Sum & Diff Identities, Tangent Identities; Exponential Functions -Growth and Decay)
9	**Lessons 29-32** (Unit Circle; Large and Small Fractions; Quadrantal Angles; Addition of Vectors; Overlapping Triangles; Symmetry, Reflections, Translations; Inverse Functions Inverse Trig Functions)	**27**	**Lessons 89-90** (The Ellipse-2; Double & Half Angle Identities)
10	**Lessons 33-35** (Quadrilaterals; Summation Notation; Linear Regression, Decomposing Functions; Change in Coordinates; Distance Formula)	**28**	**Lessons 91-93** (Geometric Progressions; Notations for Permutations and Combinations; Advanced Trig Identities, Triangle Inequalities)
11	**Lessons 36-39** (Angles > 360 deg, Sums of Trig Functions; Boat in the River Problems; Line as Locus, Midpoint Formula; Permutations, Designated Root, Overall average Rate; Radian Measure of Angles; Forms of Linear Equations)	**29**	**Lessons 94-97** (Graphs of Secant and Cosecant, Graphs of Tangent and Cotangent; Advanced Complex Roots; More Identities; Ambiguous Case- Triangles)
12	**Lessons 40-42** (Argument IN mathematics; Laws of Logarithms, Properties of Inverse Functions; Reciprocal Trig Functions, Permutation Notation; Conic Sections, Circles, Constants in Exponential Functions)	**30**	**Lessons 98-100** (Change of Base, Contrived Log Problems; Sequence Notations, Arithmetic and Geometric Means; Product Identities, Sum and Difference Identities)
13	**Lessons 43-46** (Periodic Functions, Graphs of Sin & Cos; Abstract Rate Problems; Conditional Permutations; Complex Roots, Factoring)	**31**	**Lessons 101-104** (Determinants; Binomial Expansion, Calculations with Logs, Power of Hydrogen); Arithmetic and Geometric Series)
14	**Lessons 47-49** (Vertical Sinusoid Translations; Arctan; Powers of Trig Functions, Perpendicular Bisectors; Log Function)	**32**	**Lessons 105-108** (Cofactors; Expansion by Cofactors; Translations of Conic Sections; Equations of Ellipse &Hyperbola; Convergent Geometric Series; Matrix +/x)
15	**Lessons 50-52** (Trig Equations; Common/Natural Logs; Inviolable Argument, Arguments in Trig Equations)	**33**	**Lessons 109-112** (Rational Numbers; Log Inequalities; Binomial Theorem)
16	**Lessons 53-55** (Unit Multipliers, Angular Velocity; Parabolas; Circular & Distinguishable Permutations)	**34**	**Lessons 113-114** (Synthetic Division, Zeros and Roots; Graphs of Factored Polynomial Functions
17	**Lessons 56-58** (Triangular Areas, Areas of Segments, Systems of Inequalities; Phase Shifts in Sinusoids; Period; Distance from Point to Line, Narrow and Wide Parabolas)	**35**	**Lessons 115-117** (The Remainder Theorem; Region of Interest, Rational Roots Theorem)
18	**Lesson 59-60** (Advanced Logarithmic Problems, Loss of /solutions Caused by Division)	**36**	**Lessons 118, 121** (Roots of Polynomial Equations; Piecewise Functions)

*** These plans are a guideline and may be altered throughout the year. Circumstances such as hurricanes or other events may require that this schedule be updated.**