**ADVANCED MATH AND SCIENCE ACADEMY**

**STEM-10**

**Accelerated Pre-Calculus & AP Calculus AB (virtual)**

**Mr. Sever**

 **Textbooks:**

* Pre-Calculus: *Pre-Calculus with Trigonometry by Paul A. Forester 3d ed. ISBN: 978-1-60440-044-1*
* Calculus: *Single Variable Calculus with Vector Functions, Early Transcendentals. 7th ed.*

*ISBN: 978-0-8400-4932-2*

**On-line platforms you need (for now):**

Please have a Delta Math Account. The teacher code you will need is 107990. Once we start the Calculus unit, we will also be using AP Classroom. As we use other platforms, I will make those announcements and give instructions.

**Pace:**

This is a FAST-PACED CLASS. You must work not to get behind. We are essentially doing most of Pre-Calculus and all of Calculus AB in one year. Please communicate with me if you think you are getting behind. Utilize any help sessions offered. I am here to help, but you must do your part.

**Calculator:**

You will need a graphing calculator preferably from the TI-83/84 family, especially once we get to the Calculus part of the course.

**Grading:**

*If you read nothing, read this. Assessment will NOT be virtual. This means that notes will generally not be used and your phone will certainly not be available. You will be held accountable.*

***Grading Policy:***

● 50% Tests

● 20% Quizzes

● 10% HW/ AP classroom work

● 20% Final Exam (Fall)

● AP Exam (Spring)

**Make Up Work:**

If you miss a major exam or quiz, the make-up will NOT be the same as what the other students received. If you miss a quiz, you may choose to make it up at my convenience or you may let your test grade over the same material can count for the quiz. If you miss a test, they will be made up at my convenience before or after school.

**Topics for Acc. Pre-Calculus (hopefully complete by early October)**

* Unit circle, solving right triangle problems with applications (Unit 1)
* Graphs of sine, cosine and tangent, and how they relate to unit circle (Unit 1)
* Law of Sines and Law of Cosines (unit 2)
* Trigonometric Identities (Unit 3)
* Solving Trigonometric Equations (Unit 4)
* Rational Functions (Unit 5)

**Topics for AP Calculus AB (We will follow the curriculum developed by the College Board)**

* Functions, Graphs and Limits.
	+ Analysis of Graphs
	+ Limits of Functions (including one sided limits)
	+ Asymptotic and Unbounded Behavior
	+ Continuity as a Property of Functions
* Derivatives
	+ Concept of a Derivative
	+ Derivative at a Point
	+ Derivative as a Function
	+ Second Derivatives
	+ Application of Derivatives
	+ Computation of Derivatives
* Integrals
	+ Interpretations and Properties of Definite Integrals
	+ Applications of Integrals
	+ Fundamental Theorem of Calculus
	+ Techniques of Antidifferentiation
	+ Applications of Antidifferentiation
	+ Numerical Approximation to Definite Integrals

**A Final Word:**

There are two things you can control 100% of the time, Attitude and Effort. Good attitude means making the best of any situation, taking responsibility and not making excuses. Good Effort means always doing work that you can be proud of. I am much more impressed with someone who has to work really hard for a B, than someone who should get an A, but is lazy and settles for a B.

Also, I have no tolerance for dishonest people, period!

**----It takes a lot of character to do the right thing, even when no one is looking.**