Welcome to AP Calculus AB

1) There is a worm that crawls very slowly. Each day it advances by three and a half inches. After how many days has the worm traveled seventy inches?
2) The worm sees a scary-looking bird ten inches away. It spends three full days fleeing from this scary (and surprisingly stationary) bird. How far from the bird is the worm at the end of the three days?

Compute those two numbers before reading the next paragraph.

Okay, by now you have finished computing the answers to that problem. How many of you found that the answers were "twenty days" and "twenty and a half inches"? Raise your hands. . . . Lots of you! Good! Put your hands down. How many of you invoked the properties of an arithmetic sequence with common difference d=3, using the formula $a_n = a_1 + (n-1)d$? Come on, raise your hands!

I didn't see any hands. All of you were able to solve that problem without referring to the formula for an arithmetic sequence. Hmmmmmmmmm.

But two years ago in your Algebra 2 class we spent *time* on learning the arithmetic sequence formulas. Was that wasted work?

No, it wasn't wasted work. When you were struggling in algebra class to understand how to derive and apply those formulas you were getting useful practice at thinking. It's okay if you've forgotten the specific definitions and formulas from Algebra 2. You have retained the thinking abilities that you developed back in Algebra 2, and that is what will matter.

(By the way, how many of you cheated, reading the two answers before computing the values? What?! So many of you! Come on, class, DON'T BE LAZY!)

Your math class is a class in which **you are learning how to think**. As a part of the process of practicing thinking, you will **practice communicating**. Communication of ideas is an important part of thinking. I will require you to practice communicating the ideas of calculus in several different ways throughout the year, including written and oral presentations.

Why are you Here in AP Calculus AB?

You don't have to answer that. Whatever the reason, you are very welcome here (as long as you promise to put in some effort). I used to congratulate students on having made it to this level in mathematics, but I don't want to do that anymore. It helps to spread the unfortunate attitude that there is honor in being in an AP class or an honors class, which is absurd. Wherever you are in your mathematics education, if you arrived there through diligence and hard work then I applaud you.

Students in Calculus AB may be coming from Honors Pre-calculus or from CP Calculus (or in rare cases from CP Pre-calculus). You are all welcome here, regardless of the path by which you came. I will support you according to your individual needs so that you have the best possible chance of success. Here are the few things I can do, though, to help you succeed: I can plan the lectures, discussions, and activities carefully, I can listen to your questions and concerns, and I can be available for extra help. Most of the responsibility for your success, though, lies with you. Learning mathematics requires many hours of careful reflection. If you spend quality time being thoughtful about calculus then you will be successful in my class.

Your grade in this class breaks down as follows: 90% in-class assessments; 10% other assignments, including homework. An approximate description of grading procedures is available at my website, http://www.mtsd.k12.nj.us/dfishman. Although the tests and quizzes determine the majority of your grade, the homework and class discourse are by far more important. I don't care whether you study for my tests. **Just get a good night's sleep before the test for goodness' sake!** I do care whether you spend time thinking about the homework every night.

Every year I make some changes to the way that this class is run. Lately I have been working on introducing instructional videos for you to watch for homework. I will not be assigning homework out of textbook exercises. I will keep a class set of textbooks in the classroom, and I will not require you to sign out a book for the school year. We will be using Google Classroom to communicate via the web. I will give you assignments there and collect work from you through there sometimes. You can also ask questions and get answers there.

Things to Bring to Class:	**Things to <u>Not</u> Bring to Class:**
• **Your notebook for class notes** • **Your homework notebook** • **Your graphing calculator** • **Your smartphone or portable wireless device (optional)**	• **Your textbook** • **Your food containing nuts**

Other Rules:

- **Put high-quality effort into your work, and be responsible for missed work.**
- **Respect each other's rights!**

Not only you, but each person in this class has the right to be heard, not to be interrupted, and to make a mistake without ridicule.

- **Ask questions!**

You are probably not the only one who does not understand. Others will appreciate your courage to speak up and ask questions.

The use of a graphing calculator is not just a fun detour from the learning—it is part of the curriculum of this course. Each of you is required to have a graphing calculator. Borrow one for the year rather than buy one if you can manage it. The newer models are **<u>not</u>** significantly superior to the older ones. A TI-83 or TI-84 model (by Texas Instruments) is recommended. Many other models are also acceptable, but a student choosing a different model must learn independently how to access the various graphing calculator functions.

The AP Calculus curriculum culminates in an exam given on Thursday, May 5, 2016. We still have five weeks of classes after the exam. We will spend them working on activities and explorations that take us beyond the realm of the normal curriculum. Your work on these activities will be scored and the scores will be a component of your fourth marking period grade.

If you need extra help beyond Google Classroom, come to see me in B2219 after school. I will be there every Thursday. I will often be there on other days as well. You can check with me in advance, or just stop by. In some cases, I am able to come in before school starts, but this is strictly by appointment. You can also try sending me an email message with your questions.