

Welcome to AB Calculus

Dear students,

Welcome to AP AB Calculus. We are excited to be teaching Calculus this year, seeing a few familiar faces that have been in our past classes for Algebra II and Trigonometry and meeting new students as well. This will be a fun, interesting and challenging course in which you will learn a lot of mathematics, however mastery of these topics will require hard work and preparation on your part. Be proactive with your learning. Do all of the assigned homework and really focus on understanding and mastery of the concepts. Show your work on all assignments to train yourself for the free response questions on the AP exam. You will be required to not only have an answer, but to also show your work and explain the concept that helps you arrive at your answer. Develop good habits in your work throughout the year. Ask lots of questions and come to tutoring if you are struggling with a concept. Don't be afraid to come to me for help as we work together to prepare for the AP exam in May.



WE WILL BE MEETING DURING EARLY AP WEEK! It is really important for students to attend if possible. We will be covering essential review topics as well as starting some explorations that help set up the foundation for calculus concepts. If you have a conflict you may attend with any section.

Tuesday 8/29, Thursday 8/31

- 1st period meets 8:40 – 10:10 in Room 210
- 2nd period meets 12:10 – 1:40 in Room 210

We have prepared some review materials for you to revisit algebra and precalculus topics as needed.

Steps 1, 2, 3 and 4 and the first exploration in Step 5 must be completed BEFORE Early AP week.

Summer Assignment

Step 1: Read and highlight the Prerequisites for Calculus Review Packet. These are the essential skills to be successful in calculus. I have always thought that students who struggle, struggle more with the past algebra skills than with the concepts covered in calculus. As Alfred Lord Tennyson stated, “*the past is prelude, the best is yet to come*”. So use the review materials to help put you in the best position for future success in calculus. I would also print out and memorize the unit circle and trig functions as well as basic parent graphs and characteristics from Algebra II before class begins.

Step 2: Print out the three “Gateway Tests”. Work all problems on **your own lined paper in PENCIL**. Copy the problem as given, show all work clearly and concisely and/or explain your reasoning for how you arrived at your answer. NO CREDIT WILL BE GIVEN FOR “ANSWERS ONLY”. The reason for this is that grading on the AP awards points for each part of the problem. An FRQ (Free response question) is typically worth 9 points, only 1 of which is for the actual answer. The rest is awarded for clear work and explanation of methods used to arrive at that answer. For each test, **staple the printed test** to the front of your work.

Step 3: After completing the Gateway Tests, print out the file entitled “**Gateway Answers**”. Check and correct your work using a red or blue pen as follows:

- If your answer is correct, **place a check** on the problem on the front printed page.
- If your answer is incorrect, **place an X** next to the problem on the front printed page and **rework in pen on separate sheet of paper labeled “Corrections”**. If you still cannot get the correct answer after reworking, place a ? next to the X on the front printed page so you know that you need to ask about that question during early AP week. **Staple your corrections to the back** of each test packet and paper clip all tests together.

Step 4: Do this part no earlier than one week before early AP week starts. After checking the Gateway Tests, print out the file entitled “Mad Minutes Trig Practice”. Use your knowledge of the unit circle, trig functions and trig inverse functions to complete. You should time yourself and allow **20 minutes** to complete all. Find either the exact ratio or exact angle as appropriate. **NO CALCULATOR OR NOTES ARE ALLOWED SO STUDY BEFORE YOU BEGIN.** Bring to class with Gateway tests on the first class during early AP Week.

Step 5: Since the best is yet to come, I decided to focus this last part of your summer assignment on previewing some essential concepts in calculus. You will complete the exploration 1: Pi as a limit before coming to AP week. **We will be completing the remaining explorations during early AP week.** Your final write ups of all the explorations will be due on the first day of class after Labor Day. If you miss early AP week, please have all of the steps completed and all explorations completed on your own to turn in on first day of class. Follow the instructions listed below for the explorations:

- Present your work on separate paper. Be neat and organized! If necessary, rewrite your work, just as you would an essay for another class. You may type your responses but all mathematical work must also be shown clearly. You may utilize excel spreadsheets to present data collected.
- Be expressive. Write in complete sentences and show your math clearly. Any reader should be able to follow your thinking and underlying logic.
- When drawing graphs, use appropriate windows, label what the axes represent, show a scale, give your graph a title and identify any key values and points. You may use excel spreadsheets to create your graphs.
- At the end of each exploration/project, summarize your findings and conclusions in a well-written paragraph. Answer all of the questions posed in the assignment and include any other insights you have made. *Convince your reader that you thoroughly understand the concepts covered!*

Looking forward to a great year