

## AP Calculus AB Summer Assignment 2022-2023

I'm so glad you have chosen to take AP Calculus this year! It is by far one of my favorite courses to teach! You will have a summer assignment to prepare for the upcoming AP Calculus course. The assignment will consist of two separate assignments.

The first is an assignment on [deltamath.com](https://www.deltamath.com). You will need to make an account if you do not already have one. In order to access the assignment, you will need to add my teacher code, 923278 and select the appropriate AP Calculus AB with code HN9R-T82W . You may also access the delta math course using the link: <https://www.deltamath.com/students?code=HN9R-T82W>. If you already have an account, you will need to add the new course for AP Calculus AB. Deltamath is an online practice format in which examples are provided. It will also give immediate feedback on the validity of your solution. You will be able to attempt a problem set as many times as needed, however you must correctly answer the required number of problems. This assignment will focus on the most important concepts from Precalculus.

The second portion of the assignment will be odd numbered problems from your textbook. Use this time to familiarize yourself with the textbook. ALL work must be shown when appropriate. Remember these are odd numbered problems, so check your solution with the back of the textbook. This assignment will focus on a review of limit, continuity, and IVT concepts. Your notes from the limits unit in Precalculus would be a great resource to remind you how to approach the problems.

**Please complete both required assignments before the first day of school. These will be your first grades. We will review unit 1 for 3-4 days and take a test over it the first week of school.**

### OPTIONAL:

1. You may want to skim Chapter P of your textbook as well as ensure that you understand the examples. We will not complete this prerequisite chapter and you will not need to turn in anything, but it might be helpful to remind yourself how to do some of the skills from this unit. Section 8 is only applicable to those taking BC or Calculus II. **This suggestion is optional.**
2. There is an optional assignment in which you can make vocabulary cards. We will be making vocab/flash cards throughout the year and this will be a great way to get an early start on them. A list of suggested cards is provided at the end of this page. You may use any size cards but I suggest 3x5 index cards. **This is purely OPTIONAL!**

I will be available by email throughout the summer should you need any additional guidance. I hope you have an enjoyable summer and look forward to the school year!

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## Textbook problems:

1.1: Limits from a table or graph pg. 85  
1 - 31 ODD

1.2 Algebraic Limits pg. 99  
31 - 41 ODD, 51 - 57 ODD, 73 - 77 ODD

1.3 Continuity p.112  
21 - 27 ODD, 85, 89, 101

1.4 Limits with trigonometry: we will review this together so I can teach you the Squeeze Theorem. You may want to skim the examples.

1.5 Limits with vertical or horizontal asymptotes pg. 140  
17 - 33 ODD, 43 - 49 ODD, 55 - 59 ODD

1.6 The Epsilon - Delta definition of a limit  
This is NOT a requirement for AP Calculus. It is sometimes taught at the university level, but not always. We can discuss if after the AP exam in May provided we have time.

IF you learn well with flashcards, these are the recommended topics to remember from Precalculus:

### OPTIONAL Vocabulary Card Topics

1. **Parent Functions** (include a basic sketch of the graph and domain/range; each one should have its own card): Linear, Quadratic, Cubic, Absolute Value, Square Root, Cube Root, Rational (Reciprocal), Natural Log, Exponential, Sine, Cosine, and Tangent.
2. **Average Rate of Change** ( $\frac{y_2 - y_1}{x_2 - x_1}$ )
3. **Point-Slope Equation of a Line:**  $y_2 - y_1 = m(x_2 - x_1)$
4. **Trig Identities** (can all be on one card if you want): Pythagorean, Reciprocal, Quotient Identities
5. **Unit Circle** (if you need a reminder about how to do it)
6. **Natural log:** expand/condense rules