

June, 2024

Dear Students,

Welcome to Advanced Placement Calculus (BC). I am looking forward to our class with great anticipation.

My goal for each and every one of you is a deep and comprehensive understanding of calculus as well as success with all course assignments and assessments, including the A.P. Exam in May, 2025. Due to the extensive amount of material (the BC curriculum represents two full semesters of college calculus in a single year) that must be covered, and the depth of understanding required to master the study of calculus, it is imperative that we make effective and efficient use of a very valuable resource - time!

Toward that end a summer assignment is required which must be completed and submitted in class by Tuesday, September 3, 2024. **This is a course requirement and failure to complete the assignment will endanger your placement in the Calculus BC class.** The majority of the assignment is on material with which you are (or should be) familiar.

For each Section assigned, you will:

- i) read and takes notes on all textbook material, including written text, worked-out examples, explorations, etc. Your notes will be handed in separate from your textbook exercises;
- ii) view (and take notes as appropriate for) all of the assigned videos that correspond to the different topics;
- iii) consult the worked out solutions that I have provided for you as a model;
- iv) do the assigned problems on separate paper to be handed in; each Section assignment should be stapled separately with a full heading at the top, including your name, course name, "Chapter.Section" designation, and page number; please note that all odd problem answers can be located in a section at the back of the textbook, and you may also consult the solutions manual for all problem solutions.

Note: Your worked out solutions should be at least as detailed as the corresponding examples that I have provided (either in video or hard-copy format), but in many cases the solutions manual may skip some algebraic steps which you are strongly encouraged to show.

I recommend that you look the same material over several times during the summer so that you don't "lose your edge", especially as we approach the beginning of our school year. During our first three days together, you will take a series of three tests on this material which will count toward your first quarter grade.

Good luck with the end of this school year. Best wishes for a great summer, and a meaningful and productive school year.

Mr. "C"

## Section 1.1 – Rates of Change and Limits

- 1) Read/Take Notes: pages 63 – 69
- 2) Use the Chapter 1 Outline – Section 1.1 to organize your work as you take notes
- 3) See the Chapter 1 Outline – Section 1.1 for HW Exercises

## Section 1.2 – Limits Involving Infinity

- 1) Read/Take Notes: pages 74 – 79
- 2) Use the Chapter 1 Outline – Section 1.2 to organize your work as you take notes
- 3) See the Chapter 1 Outline – Section 1.2 for HW Exercises

## Section 1.3 – Continuity

- 1) Read/Take Notes: pages 82 – 88
- 2) Use the Chapter 1 Outline – Section 1.3 to organize your work as you take notes
- 3) See the Chapter 1 Outline – Section 1.3 for HW Exercises

## Section 1.4 – Rates of Change and Tangent Lines

- 1) Read/Take Notes: pages 91 – 97
- 2) Use the Chapter 1 Outline – Section 1.4 to organize your work as you take notes
- 3) See the Chapter 1 Outline – Section 1.4 for HW Exercises

## Section 2.1 – Derivative of a Function

- 1) Read/Take Notes: pages 105 – 110
- 2) Use the Chapter 2 Outline – Section 2.1 to organize your work as you take notes
- 3) See the Chapter 2 Outline – Section 2.1 for HW Exercises

***REMINDER: You must use the definition of the derivative, not the shortcut***

## Section 2.2 – Differentiability

- 1) Read/Take Notes: pages 115 – 120
- 2) Use the Chapter 2 Outline – Section 2.2 to organize your work as you take notes
- 3) See the Chapter 2 Outline – Section 2.2 for HW Exercises

## Section 2.3 – Rules for Differentiation

- 1) Read/Take Notes: pages 122 – 129
- 2) Use the Chapter 2 Outline – Section 2.3 to organize your work as you take notes
- 3) See the Chapter 2 Outline – Section 2.3 for HW Exercises

## Section 2.4 – Velocity and Other Rates of Change

- 1) Read/Take Notes: pages 133 – 140
- 2) Use the Chapter 2 Outline – Section 2.4 to organize your work as you take notes
- 3) See the Chapter 2 Outline – Section 2.4 for HW Exercises

**You must be able to evaluate by hand (without a calculator), basic trigonometric, exponential, and logarithmic expressions. Make certain you are able to do so. You may (and probably should) review this material in certain parts of Chapter 0.**