

June, 2016

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, including the A.P. Exam in May, 2016. Due to the extensive amount of material (the BC curriculum represents two full college semesters of calculus in a single year) that must be covered and the intensive nature of the discipline of calculus, it is imperative that we make effective and efficient use of a most valuable resource - time!

Toward that end a summer assignment is required which must be completed and submitted in class by September 6, 2016. **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 that you are (or should be) already familiar with.

For each chapter/section assigned, you will:

- i) read and takes notes on all text book material, including written text, worked-out examples, explorations, etc; your notes will be handed in separate from your textbook exercises;
- ii) 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 book;

Note: Your worked out solutions should be at least as detailed as the corresponding examples in the textbook (in most cases, even more detailed!).

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 towards your first quarter grade.

Good luck on your final and regents exams. Best wishes for a great summer, and a meaningful and productive school year.

Mr. "C"

Section 2.1 – Rates of Change and Limits

- 1) Read/Take Notes: pages 59 – 65, excluding
 - Definition of a Limit (beige box on page 60)
 - Sandwich Theorem (page 65)
- 2) Exercises on page 66: # 1, 3, 5, 10, 11, 13, 16 – 20, 22, 24, 26, 37, 39, 49, 51, 52, 63, 67 – 70.

{NOTE: For numbers 24 and 26 refer to bottom of page 60}

Section 2.2 – Limits Involving Infinity

- 1) Read/Take Notes: pages 70 – 75, excluding
 - Sandwich Theorem Revisited (Example 2 on page 71)
 - Example 9 on page 75 (re: Substitution)
- 2) Exercises on page 76: # 1, 3, 5, 13, 15, 27, 29, 39, 41, 42, 45, 55.
- 3) Quick Quiz for AP Preparation on page 77: # 1, 2, 3, 4abc.

Section 2.3 – Continuity

- 1) Read/Take Notes: pages 78 – 83
- 2) Exercises on page 84: # 11 – 18, 19, 21, 23, 25, 29, 43, 45, 47, 56, 58, 59.

Section 2.4 – Rates of Change and Tangent Lines

- 1) Read/Take Notes: pages 87 – 91
- 2) Exercises on page 92: # 2a, 3b, 4a, 8, 9, 10, 19, 20, 23, 25, 29, 33abc.
- 3) Quick Quiz for AP Preparation on page 94: # 1, 2, 3, 4.

Section 3.1 – Derivative of a Function

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

- 1) Read/Take Notes: pages 99 – 104
- 2) Exercises on page 105: # 2, 3, 5, 7, 8, 10, 12, 17, 19, 20, 21, 22, 26, 27, 30, 31, 42, 44.

Section 3.2 – Differentiability – SKIP THIS SECTION

Section 3.3 – Rules for Differentiation

- 1) Read/Take Notes on pages 116 – 119 (top)
- 2) Exercises on page 124: # 1, 5, 6, 7, 23d, 25, 37, 39, 43a
- 3) Quick Quiz for AP Preparation: # 2, 4

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.