**Materials**:

Textbook: Calculus of a Single Variable 9th Edition by Larson, Edwards

Notes: Notebook or 3 ring binder with loose-leaf paper, handouts,

Graphing calculator, pencils, highlighters, etc.

**Essential Question:**

How can you evaluate a limit graphically, analytically, and numerically?

**Rationale**:

This LAP is important to the study of mathematics because it helps the student realize that Calculus is built on the concept of limit. The student will learn the definition of a limit and how to calculate limits. In Calculus, limits are used to test functions for continuity. Mostly, students will work with continuous functions. Later, limits will be used to define derivatives and to prove the Fundamental Theorem of Calculus.

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| Letter Day and Date | Section and Objectives | Note Pages and Assignment |
|  | Introduction to course and expectations  Numerically, graphically, and algebraically classify and analyze functions. | Notes pg 1-2 |
|  | Evaluate, if it exists, the value of a limit from a graphical approach, including one-sided limits. | Notes pg 3-11  Homework packet #1-13 |
|  | Evaluate limits analytically, including direct substitution, cancellation and rationalization, applying the properties of limits | Notes pg 12-21  Homework packet #14-35  Study for quiz |
|  | Quiz #1 and homework time |  |
|  | Evaluate limits of exponential functions analytically | Notes pg 22-23  Homework packet # 36-39 |
|  | Evaluate limits of trigonometric functions analytically. | Notes pg 24-29  Homework packet # 40-53 |
|  | Graphically and analytically, apply the three part definition of continuity to determine if a function is continuous at a point | Notes pg 30-33  Homework packet # 54-78 |
|  | Understand and apply the intermediate value theorem | Notes pg 34-36  Homework packet # 79-83 |
|  | Quiz 2 and Homework time |  |
|  | Distinguish between infinite limits and limits at infinity, and use them to identify asymptotes. | Notes pg 37-44  Homework packet #84-91 |
|  | Review for Lap 1 Test  Timed AP Multiple Choice Exercise | Extra Practice on Limits and Multiple Choice Practice Study for exams |
|  | Test #1 Lap 1 Non Calculator ~ Limits and Continuity | Extra Practice on Limits Worksheet is due – 25 points |
|  | Test #2 Lap 1 Calculator ~ Limits and Continuity | Lap 1 Homework Packet is dues – 50 points |

**Independent activities:**

Blueberry Pancakes Recipe with Limits - This is a fun activity I want you to do with a group (2-4 people) at home. Show all your work on a separate piece of paper and document your pancake experience through pictures.

Due\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_