**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:** What are the three big rules of differentiation?

**Rationale**: To be able to learn the basic rules of differentiation and learn the derivative of logarithmic functions.

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| **Letter Day and Date** | **Section and Objectives** | **Note Pages and Assignment** |
|  | Apply the product rule of differentiation analytically, graphically, and numerically.  | Notes pg 1-6Homework packet #1-12 |
|  | Apply the quotient rule of differentiation analytically, graphically, and numerically and derive the differentiation rules for tangent, cotangent, secant, and cosecant.  | Notes pg 7-13Homework packet #13-24 |
|  | Apply the chain rule of differentiation analytically, graphically, and numerically and derive the differentiation rule for an inverse function.  | Notes pg 14-19Homework packet # 25-39Study for quiz |
|  | Quiz Review | Notes pg 20 – 21 |
|  | Quiz # 1 |  |
|  | Analytically determine the derivative of exponential functions whose bases are *e* and natural logarithmic functions. Numerically determine and interpret the value of the derivative of a function using the graphing calculator.  | Notes pg 22 - 25Homework packet # 40-50 |
|  | Understand the relationship between differentiability and continuity.  | Notes pg 26 - 31Homework packet # 51-61 |
|  | Find the derivative of inverse functions | Notes pg 32 - 35Homework packet # 62-65 |
|  | Quiz # 2 |   |
|  | Review for Test/ Homework Time | Note Pages 36-40 |
|  | Lap 3 Non Calculator Test | Extra Practice on Rules of Differentiation Worksheet is due – 25 points  |
|  | Lap 3 Calculator Test | Lap 3 Homework Packet is dues – 50 points  |

**Independent activities:**

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