AP Calculus AB

**Chapters 3 & 4 Learning Goals**

***Derivatives***

*Lesson 3-1: Derivative of a Function*

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| * I can calculate the derivative of a function using the definition of a derivative (at least once) and the alternative definition of a derivative (at least once)
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| * I can use the power rule (when appropriate) to find derivatives of functions
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*Lesson 3-2: Differentiability*

* I can find where a function is not differentiable and distinguish between corners, cusps, discontinuities, and vertical tangents
* I can approximate a derivative numerically (using a calculator) I can use the Sandwich Theorem to find certain limits indirectly.

*Lessons 3-3 & 4-4: Rules for Differentiation, Part 1*

* I can use rules of differentiation to calculate derivatives of polynomials, rational functions, trigonometric functions, and .

*Lessons 3-3, 4-4, & 3-5:**Rules for Differentiation, Part 2*

* I can use rules of differentiation to calculate derivatives of polynomials, rational functions, trigonometric functions, and .

*Lesson 4-1: Chain Rule*

* I can use the chain rule to compute derivatives.

*Lesson 4-2: Implicit Differentiation*

* I can use implicit differentiation to compute derivatives.

*Lesson 4-3: Derivatives of Inverse Functions*

* I can calculate the numeric derivative of an inverse function.
* I can calculate the derivative of an inverse trigonometric function.

*Lesson 4-4: Derivatives of Exponential and Logarithmic Functions*

* I can find the derivatives of exponential and logarithmic functions.

*Lesson 9-2: L’Hôpital’s Rule*

* I can find limits of indeterminate form using L’Hôpital’s Rule.