**AP Calculus AB Review Guide**

Assignment:
Create a 1 page (front and back), handwritten, cumulative guide.

Scoring Rubric:
5 points: Your Name
20 points: Appearance (neatness, organized, legible)
75 points: Contains required content below

Unit Circle
-include radians, degrees, coordinate points

Limits & Continuity
-Definition of a Limit
-How to find a Horizontal and Vertical Asymptote
-Definition of Continuity (with limits)
-L’Hospital’s Rule
-Intermediate Value Theorem (include example)

Derivatives
-Limit definition of a derivative
-Derivative rules: constant, constant multiple, power, product, quotient, chain, trig, inverse trig, exponential (ex and 23x), natural log, implicit differentiation
-How to make an equation of a tangent line (include example)
-Mean Value Theorem (include example)

Applications of Derivatives: Characteristics of Functions
-Critical points
-Interval of increase, decrease
-Absolute/global vs. relative/local extrema
-Inflection points
-Interval of concave up, down
-Extreme Value Theorem
-First Derivative Test
-Second Derivative Test

More Applications of Derivatives
-Optimization
-Related Rates

Integrals
-Riemann Sums: rRam, lRam, mRam, trapezoid
-indefinite vs. definite integral
-Fundamental Theorem of Calculus (parts 1 & 2)
-U-substitution (include example of indefinite and definite integral)
-Antiderivative rules: constant, power, trig, inverse trig, exponential (ex), natural log
- Average Value

Motion
-Relationship between position, velocity, acceleration
-When a particle is at rest, moving in a positive/negative direction… in terms of velocity
-When a particle is speeding up or slowing down
-Distance vs. displacement integral

Area and Volume
-Area between a curve and the x-axis
-Area between 2 curves
-Rotational volume: disk vs. washer method
-Cross-sectional volume

Differential Equations
-Definition
-Steps to solve a diff eq
-Particular vs. general solutions to a diff eq
-Slope fields