AP Calculus AB – 2nd Quarter Assessment Grades Name: _____

Key: D-CD Concept of the Derivative D-AD: Applications of Derivatives

Most recent grade entered in Powerschool. Two consecutive scores of 3 *or higher required. Each standard is assessed at least twice. Re-taking an assessment requires proof of completed homework. Full state standards on web at:* http://j.mp/tenncalc AP Course Description: http://j.mp/apcalccd

D-CD1: Represent and interpret the derivative of a function graphically, numerically, and analytically.

Date						
Score						

D-CD2 Interpret the derivative as an instantaneous rate of change.

Date						
Score						

D-CD3 Define the derivative as the limit of the difference quotient; illustrate with the sketch of a graph

Date						
Score						

D-CD4 Demonstrate the relationship between differentiability and continuity.

Date						
Score						

D-CD5 Interpret the derivative as the slope of a curve (which could be a line) at a point, including points at which there are vertical tangents and points at which there are no tangents (i.e., where a function is not locally linear).

Date						
Score						

D-CD6: Approximate both the instantaneous rate of change and the average rate of change given a graph or table of values.

Date						
Score						

D-CD7: Write the equation of the line tangent to a curve at a given point.

Date						
Score						

D-CD8: Apply the Mean Value Theorem.

Date						
Score						

D-AD1: Describe in detail how the basic derivative rules are used to differentiate a function; discuss the difference between using the limit definition of the derivative and using the derivative rules.

Date						
Score						

D-AD2: Calculate the derivative of basic functions (power, exponential, logarithmic, and trigonometric).

Date						
Score						

D-AD3: Calculate the derivatives of sums, products, and quotients of basic functions.

Date						
Score						

D-AD4: Apply the chain rule to find the derivative of a composite function

Date						
Score						

D-AD5: Implicitly differentiate an equation in two or more variables.

Date						
Score						

D-AD6: Use implicit differentiation to find the derivative of the inverse of a function.

Date						
Score						

D-AD7: Relate the increasing and decreasing behavior of f to the sign of f ‘ both analytically and graphically

Date						
Score						

D-AD8: Use the first derivative to find extrema (local and absolute).

Date						
Score						

D-AD9: Analytically locate the intervals on which a function is increasing, decreasing or neither.

Date						
Score						

D-AD10: Relate the concavity of f to the sign of f “ both analytically and graphically

Date						
Score						

D-AD11: Use the second derivative to find points of inflection as points where concavity changes.

Date						
Score						

D-AD12: Analytically locate intervals on which a function is concave up, concave down or neither.

Date						
Score						

D-AD13: Relate corresponding characteristics of the graphs of f, f ‘ and f “

Date						
Score						

D-AD14: Translate verbal descriptions into equations involving derivatives and vice versa.

Date						
Score						

D-AD15: Model rates of change, including related rates problems. In each case, include a discussion of units.

Date						
Score						

D-AD16: Solve optimization problems to find a desired maximum or minimum value.

Date						
Score						

D-AD17: Use differentiation to solve problems involving velocity, speed, and acceleration.

Date						
Score						

D-AD18: Use tangent lines to approximate function values and changes in function values when inputs change (linearization).

Date						
Score						

In Powerschool: 4: 96 3: 86 2:66 1: 50

Two consecutive 4’s on first two attempts yields a 5: 100