**“I Can” Statements for Chapter 2 (with 3.1 and 3.2)**

(Circle one)

Yes / Not Sure I can write a limit and a one-sided limit correctly using the correct symbols.

Yes / Not Sure I can find the value of the limit of a function at a specific x-value by inspecting its graph.

Yes / Not Sure I can find the value of the limit of a “smooth” function at a specific x-value by substitution.

Yes / Not Sure I can find the value of the limit of a function at a specific x-value by algebraic simplification.

Yes / Not Sure I can use tables and graphs in the graphing calculator to find the value of a limit.

Yes / Not Sure I can evaluate one-sided limits using all the techniques mentioned above.

Yes / Not Sure I can (still) correctly graph piecewise-defined functions.

Yes / Not Sure I can use properties of limits to break a more complicated limit down into smaller parts.

Yes / Not Sure I can evaluate limits as x approaches ±∞ with or without the graphing calculator.

Yes / Not Sure I can interpret limits as x approaches ±∞ as horizontal asymptotes and vice versa.

Yes / Not Sure I can translate one-sided limits equal to ±∞ as vertical asymptotes and vice versa.

Yes / Not Sure I can write the equations of asymptotes (horizontal and vertical lines).

Yes / Not Sure I can sketch a graph of a single function that satisfies many limit requirements.

Yes / Not Sure I can use limits to verify that a function is a good right/left end behavior model for another function.

Yes / Not Sure I can find (right/left) end behavior models, particularly (but not exclusively) for rational functions.

Yes / Not Sure I can determine from a graph whether a function is continuous at a given point/set of points.

Yes / Not Sure I can use limits to determine whether a function is continuous at a point.

Yes / Not Sure I can identify 4 types of discontinuities in a function (removable, jump, infinite, oscillating).

Yes / Not Sure I can write an extended function that is continuous at points where the original function has removable discontinuities.

Yes / Not Sure I can identify a composition of continuous functions and explain that the composition is also continuous.

Yes / Not Sure I can find the value of a variable that would make a piecewise-defined function continuous.

Yes / Not Sure I can find the average rate of change between two points on a function.

Yes / Not Sure I can recognize the slope of a secant line connecting two points as the average rate of change.

Yes / Not Sure I can recognize/draw a tangent line to a curve.

Yes / Not Sure I can interpret the instantaneous rate of change of a function as the slope of a tangent line.

Yes / Not Sure I can provide correct units for rates of change in word problem contexts (especially speed).

Yes / Not Sure I can use the average rate of change over a very short time period as a good estimate of the instantaneous rate of change.

Yes / Not Sure I can use data in a table to estimate the instantaneous rate of change between two points.

Yes / Not Sure I can use limits to find the instantaneous rate of change (i.e. slope of the tangent line) of a function at a given point.

Yes / Not Sure I can use limits to find the derivative of a function.

Yes / Not Sure I can use a derivative to find the instantaneous rate of change at any point.

Yes / Not Sure I can recognize different symbols that all indicate the derivative of a function.

Yes / Not Sure I can state the standard limit definition of a derivative and recognize alternate forms.

Yes / Not Sure I can make a sketch of the derivative of a function by imagining the values of its slopes.

Yes / Not Sure I can use limits to explain why a derivative fails to exist at a point.

Yes / Not Sure I can recognize places on a graph where a derivative fails to exist.

Yes / Not Sure I can state the x-values where a function is differentiable and/or nondifferentiable.

Yes / Not Sure I can use a graph to tell whether a function is not differentiable at a point due to a corner, cusp, vertical tangent, or discontinuity.

Yes / Not Sure I can use limits to find the value of a variable in a piecewise-defined function that would make a function differentiable at a given point.