**“I Can” Statements for Chapter 3 (sections 3.3 – 3.9)**

(Circle one)

Yes/Not Sure I can use the Power Rule to find the derivative of a power of x.

Yes/Not Sure I can use the Constant Rule to write that the derivative of a constant is zero.

Yes/Not Sure I can use the Multiple Rule to recognize that the derivative of a constant multiple of a function is just the same constant times the derivative of the function.

Yes/Not Sure I can use the Sum Rule to find the derivatives of terms that are added separately.

Yes/Not Sure I can use these four rules in combination to find the derivative of a polynomial quickly.

Yes/Not Sure I can use the Product Rule correctly to find the derivative of the product of two *variable* expressions.

Yes/Not Sure I can use the Quotient Rule correctly to find the derivative of a quotient.

Yes/Not Sure I can recognize situations where using the Quotient Rule isn’t necessary (e.g. when the denominator is a monomial).

Yes/Not Sure I can find the second, third, or fourth derivative of a function.

Yes/Not Sure I can tell when a word problem is asking me to find a derivative (rate of change).

Yes/Not Sure I can (still) find the *average* rate of change (like average speed) without derivatives.

Yes/Not Sure I can find velocity, speed, acceleration, and jerk functions if I know a position/ displacement function.

Yes/Not Sure I can sketch a graph of acceleration given a graph of velocity (or a graph of velocity given a graph of position/displacement).

Yes/Not Sure I can use substitution to write a familiar geometry formula in terms of a different variable, and I can take the derivative of the formula in terms of the new variable.

Yes/Not Sure I can remember the basic economic relationship between profit, revenue, and cost.

Yes/Not Sure I can find marginal profit, marginal revenue, or marginal cost if I am given a function for profit, revenue, or cost (respectively).

Yes/Not Sure I can interpret the marginal profit, marginal revenue, or marginal cost as the money gained or lost by the production of an additional unit.

Yes/Not Sure I can recognize *simple harmonic motion* as motion described by a periodic function.

Yes/Not Sure I can recall the derivative formulas for all 6 trigonometric formulas.

Yes/Not Sure I can use the derivative formulas for trigonometric formulas in combination with the Product Rule, the Quotient Rule, and the Chain Rule (as necessary).

Yes/Not Sure I can (still) recall basic sine and cosine values for angles in the first quadrant.

Yes/Not Sure I can (still) use the unit circle to find the sine or cosine value of any angle that is an integer multiple of $\frac{π}{6}$ or $\frac{π}{4}$ radians.

Yes/Not Sure I can (still) use identities to find the tangent, cotangent, secant, or cosecant values of any angle that is an integer multiple of $\frac{π}{6}$ or $\frac{π}{4}$ radians.

Yes/Not Sure I can use the Chain Rule to find the derivative of a composite functions (with or without u-substitution).

Yes/Not Sure I can find the slope of a parametrically defined function ($\frac{dy}{dx}$) by dividing $\frac{dy}{dt}$ by $\frac{dx}{dt}$.

Yes/Not Sure I can (still) find the equation of a tangent line or normal line at a given point.

Yes/Not Sure I can find the derivative of an implicitly defined function.

Yes/Not Sure I can find the second derivative of an implicitly defined function.

Yes/Not Sure I can (still) find inverse functions by switching x and y.

Yes/Not Sure I can (still) find the graph of an inverse by reflecting through the line y = x.

Yes/Not Sure I can find the slope of a tangent line at a point (a, b) on the graph of an inverse function if I know the derivative of the original function at the point (b, a).

Yes/Not Sure I can recall the derivative formulas for all 6 inverse trigonometric functions.

Yes/Not Sure I can use the derivative formulas for inverse trigonometric functions in combination with the Product Rule, the Quotient Rule, and the Chain Rule.

Yes/Not Sure I can use calculator identities to graph arccotangent, arcsecant, and arccosecant.

Yes/Not Sure I can recall derivative formulas for exponential and logarithmic functions (with base e or with some other base).

Yes/Not Sure I can use the derivative formulas for exponential and logarithmic functions in combination with the Product Rule, the Quotient Rule, and the Chain Rule.

Yes/Not Sure I can use *logarithmic differentiation* to find the derivative of a function with a variable expression as the base *and* a variable expression as the exponent.

Yes/Not Sure I can (still) use properties of logarithms to expand or condense a logarithmic expression.

Yes/Not Sure I can (still) use the change of base formula to write a logarithm with an unusual base in terms of natural logarithms.