Math 166 Reflection, May 25

Reflecting back upon the content we covered today I realized a lot was learned. The most significant in my opinion was the algebraic shortcuts to finding the slope of the tangent line. The power rule and simple elimination of constants, saves a lot of time when compared to the longhand method learned previously. Using these new found “shortcuts” we applied them to two differentiation rules, both product and quotient, and discovered how to find derivatives that we were unable to find earlier.

Today we also learned the theory behind the product rule which turns out to be somewhat intuitive. Towards the end of our discussion, we were given a stand out problem that I found to be quite thought provoking. The problem gave us the function of motion for a particle and we were asked to find the velocity, acceleration and the answer to a final question that tied the two together. Finding the velocity of the particle ended up being just simply the use of the power rule to acquire the first derivative. The acceleration was the second derivative of the same given function. In my physics class we utilized a few formulas to find acceleration and velocity. I was intrigued that likewise, calculus had its own set.

The last aspect of today’s class that I would like to go back and discuss was the drawing of the graphs of derivative function when given a graph of an unknown function. This concept took me a long time to understand but once I got it, it was rather easy. When drawing a graph of a derivative of a function I follow the same steps every time. First, I always locate the zeros (where the function graph has zero slope) because I know that those have to be x-intercepts on my graph of the derivative. After marking those points on my graph, I look to see what sets of coordinates on the graph of the function have a positive slope. Those instances where the function’s slope is positive I make sure to graph in quadrants one and two (the upper 2/4ths of the coordinate plane). Where the slopes of the given function goes from positive to zero (flat), I make sure the line on my graph is leaving the upper quadrants and crossing the X axis. When doing the negative values, I respectively do the same but use the lower two quadrants which are quadrants three and four. My advice as a student to you is practice and find your own method. Don’t jump to second guess yourself because the two graphs often look nothing alike or even almost opposite at times.