Math 110 (Section 002) Learning Objectives

Students should be able to do the following things by the end of each respective unit. Additions may be made as the term progresses.

The definition of derivative

1. Define the derivative of a given function using limits.

2. Calculate derivatives, using the limit definition, of polynomial functions of degree $d \leq 3$, and of rational functions $\frac{p(x)}{q(x)}$ where p and q are linear.

3. Find the equation of lines tangent to the graphs of polynomial functions of degree $d \leq 3$, and of rational functions $\frac{p(x)}{q(x)}$ where p and q are linear.

4. Define what it means for a function to be differentiable.

5. Explain why differentiable functions are continuous.

6. Demonstrate, using an example, that continuous functions need not be differentiable.

7. Explain why the derivative a function is itself a linear function.