

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.

Note that curve sketching will be introduced over the following weeks. The unit 'Curve Sketching' is a summary unit.

Extrema

1. Define the terms 'critical point', 'local maximum', 'local minimum', 'global maximum' and 'global minimum'.
2. Identify critical points and find global extrema of continuous, almost-everywhere-differentiable functions, including piecewise functions, on closed intervals.
3. State and explain the Extreme Value Theorem.
4. Give examples of functions that do not satisfy the Extreme Value Theorem.
5. Prove that certain simple functions (eg. cubics) have no global extrema on the interval $(-\infty, \infty)$.