

## Math 110 (Section 002) Learning Objectives

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*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 Mean Value Theorem**

1. State and explain the Mean Value Theorem.
2. Define what it means for a function to be increasing or decreasing.
3. Explain how the Mean Value Theorem connects the derivative of a function with the graph of the function.
4. Explain the proof of the Mean Value Theorem, give an outline of the proof or a picture.
5. Apply the Mean Value Theorem to velocity problems, including problems where the theorem must be applied to a difference of functions (eg. Prove that if two runners end a race in a tie then there must have been a point in time where both runners had the same speed).