

Mean Value Theorem

After completing this section, students should be able to do the following.

- Understand the statement of the Extreme Value Theorem.
- Understand the statement of the Mean Value Theorem.
- Sketch pictures to illustrate why the Mean Value Theorem is true.
- Determine whether Rolle's Theorem or the Mean Value Theorem can be applied.
- Find the values guaranteed by Rolle's Theorem or the Mean Value Theorem.
- Use the Mean Value Theorem to solve word problems.
- Compare and contrast the Intermediate Value Theorem, Mean Value Theorem, and Rolle's Theorem.
- Identify calculus ideas which are consequences of the Mean Value Theorem.
- Use the Mean Value Theorem to bound the error in linear approximation.