

Project 1.1: Taylor Series and Taylor's Inequality

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Write an overview of the theory of Taylor Series. Be sure to touch on the following points:

- What's the motivation behind Taylor series?
- Taylor Polynomials and why they look the way they do. Give specific examples along with general commentary.
- Important examples coming from core functions.
- Different methods used to show a function is equal to its Taylor series near its center. In particular discuss Taylor's inequality and how it can be used. Give a detailed example.