

Math 121 Chapter 3

3.1 Graphing Using the First Derivative

- ★ $f'(x)$ tells rate of change, meaning increasing or decreasing
- ★ find relative highs and lows of the graph

3.2 Graphing Using the First and Second Derivatives

- ★ f'' tells us concavity
- ★ draw the curve of the graph w/o plotting (many) points!

3.3 Optimization

- ★ Using calculus to find the best (largest or smallest) outcome

3.4 Further Applications of Optimization

- ★ Real-world problems

3.5 we will skip

3.6 Implicit differentiation and related rates

- ★ One more differentiation technique
- ★ Another type of real-world problem: if one quantity changes this fast, how fast does a related quantity change?

3.7 we will skip