

**Homework 7 - Math 141, Frank Thorne (thornef@mailbox.sc.edu)**

**Due Monday, October 19**

- (a) What do the words **absolute maximum**, **absolute minimum**, **local maximum**, and **local minimum** mean?
- (b) What is the first derivative theorem for local extreme values? Give a brief, informal explanation for why it is true.
- (c) (Trick question. Explain why.) Explain how to find all the absolute maxima of a function.
- (d) Explain how to find the absolute extrema of a continuous function on a closed interval.
- (e) Thomas, Ch. 4.1, 1-4, 53-68 (even required, odd additional).
- (f) What is the first derivative test for local extrema? Explain roughly why it is true.
- (g) Thomas, Ch. 4.3, 1-6, 19-34 (even required, odd additional). In all cases **graph the function in question**.