**Math 273 - Fall 2016**
Homework 8
Due November 28th, 2016

One of the biggest problems of mathematics is to explain to everyone else what it is all about. The technical trappings of the subject, its symbolism and formality, its baffling terminology, its apparent delight in lengthy calculations: these tend to obscure its real nature. A musician would be horrified if his art were to be summed up as "a lot of tadpoles drawn on a row of lines" but that's all that the untrained eye can see in a page of sheet music... In the same way, the symbolism of mathematics is merely its coded form, not its substance.

— Ian Stewart

Turn in:

(1) In the graph of $h(x)$ shown below, which is over the interval $[0, d]$, state whether $h(x)$ has an absolute maximum, absolute minimum, local maximum, local minimum, or none of these, at each number a, b, c, d in the interval (more than one might apply at a given point).
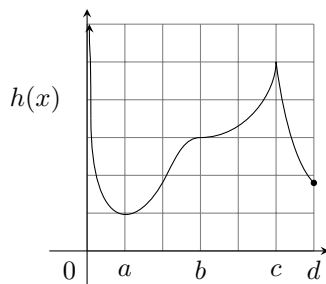
(2) Sketch the graph of a function f that is continuous on $[-2, 2]$ and which has the properties:
   - An absolute maximum at 2, an absolute minimum at -1, and such that 0 is a critical number but there is neither a maximum nor minimum at 0.

(3) Do the following problems: 4.1.36, 4.1.61, 4.2.20, 4.2.25.

Recommended (not to turn in): 4.1.52, 4.1.56, 4.1.70, 4.2.12, 4.2.15, 4.2.21.