Dror Bar-Natan: Classes: 2003-04: Math 157 - Analysis I:

Homework Assignment 9

Assigned Tuesday November 4; due Friday November 14, 2PM, at SS 1071

Required reading.   All of Spivak Chapter 9.

To be handed in.   From Spivak Chapter 9: Problems 1, 9, 15, 23.

Recommended for extra practice.   From Spivak Chapter 9: Problems 8, 11, 21, 28.

Just for fun.   Write a computer program that will allow you to draw the graph of the function

$$f(x) = \sum_{n=0}^{\infty} \frac{1}{2^n} \sin 3^n x,$$

and will allow you to zoom on that graph through various small "windows". Use your program to convince yourself that f is everywhere continuous but nowhere differentiable. The best plots will be posted on this web site! (Send pictures along with window coordinates by email to drorbn@math.toronto.edu).