

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

## Homework Assignment 5

Assigned Tuesday October 7; due Friday October 17, 2PM, at SS 1071

**Required reading.** All of Spivak Chapter 5.

**To be handed in.** From Spivak Chapter 5: 1 (odd parts), 3 (odd parts), 13, 21, 37.

**Recommended for extra practice.** From Spivak Chapter 5: 1 (even parts), 3 (even parts), 14, 24, 26.

**Just for fun.** Are there irrational numbers  $a$  and  $b$  so that  $a^b$  would be rational? Can you find irrational numbers  $a$  and  $b$  so that  $a^b$  would be rational?

Notice that these are two questions and not one. There is some interesting tale on the philosophy of mathematics for which this is a prime example; have your professor tell you about it some day between XX:00AM and XX:10AM.