Homework Assignment 12a

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

Required reading. All of Spivak's chapter 13 and the web-only handout "What Went Wrong with Term Exam 2?".

My main decisions after reading your comments and some reflection —

1. I will try to begin every class asking you "have you reviewed your class notes from last class?", hoping that after some repetitions of this ritual more of you will take the time for such reviews.

2. Almost every homework assignment will have one or two exercises marked as "in class review problem(s)". These will be assigned on Tuesdays (with the rest of the assignment) and will be solved in class the following Thursday, two days later. The idea is to get you exposed to a little more problem solving, and to give you a couple days to think about these problems before the solution will be presented.

3. I will ask the TAs to solve old term exams in the tutorials right before our two remaining term exams.

4. I will take extra care in writing the remaining exams, though I cannot promise that they will be easier.

5. I will aim to cover about 2 weeks worth of material less than what was covered less year. This will be done by leaving out certain topics and by thinning the discussion of certain other topics. The math department undergraduate office will be notified of this change so that your professors next year will be aware of it too.

6. As a first pause (and as HW ran a bit ahead of class), this homework assignment is identical to the previous one. If you don't submit it, your grade from the previous one will carry over to this one. But you also get a chance to do a lot better. Take it!

To be handed in. From Spivak Chapter 13: Problems 1, 7 (even parts), 8 (even parts), 13 and 37.

Recommended for extra practice. From Spivak Chapter 13: Problems 5, 7 (odd parts), 8 (odd parts), 9 and 39.

In class review problem(s) (to be solved in class this Thursday). Problem 15 of Spivak's chapter 13: Prove that

$$\int_1^a \frac{dt}{t} + \int_1^b \frac{dt}{t} = \int_1^{ab} \frac{dt}{t}.$$

Hint: This can be written $\int_1^a \frac{dt}{t} = \int_b^{ab} \frac{dt}{t}$. Every partition $P = (t_0, \ldots, t_n)$ of $[1, a]$ gives rise to a partition $P' = (bt_0, \ldots, bt_n)$ of $[b, ab]$, and conversely.