

Homework Assignment 12

Assigned Tuesday November 25; not to be submitted

Required reading. All of Spivak Chapter 12.

Recommended for extra practice. From Spivak Chapter 12: 1, 5, 8, 11, 18, 23.

On Term Exam 2. It will take place, as scheduled, during the tutorials on Monday December 1st. You will have an hour and 45 minutes to solve around 5 questions, with no choice questions. The material is everything covered in class until and including Thursday November 20th, including everything in the relevant chapters (6–11) of Spivak’s book (though not including the appendices to these chapters, except the appendix on convexity which you are required to know at the same depth it was covered in class). The material in chapters 1–5 is not officially included, though, of course, what chance have you got answering questions about derivatives (say), if you aren’t yet absolutely fluent with limits?

Some of the questions may have a part in which you will be required to reproduce an example or a definition or a proof given in full in class or in the text. The class material is important; I put proofs on the blackboard because I really want you to understand them. Doing lots of exercises is great, but the most important exercises are the ones that are called “theorems” and are shown in class; that’s precisely why they are shown in class!

Calculators will be allowed but will not be useful beyond emotional support; no devices that can display text will be allowed.

Important. Julian’s group, which usually meets at LM 157, will take the exam in Brennan Hall room 200 (BR 200). **Warning:** This is far far far away, on the other side of Queen’s Park, at 81 St. Mary Street. See the map at <http://www.osm.utoronto.ca/map/>.

Preparing for Term Exam 2.

- Re-read your notes and make sure that you understand *everything*.
- Re-read Spivak’s chapters 1–11 and make sure that you understand *everything* (excluding the appendices, though including the appendix on convexity).
- You may want to prepare a list of all topics touched in class (you may reach 50 or even 100), and you may want to go over this list several times until you are sure you understand everything in full.
- Make sure that you can solve every homework problem assigned or recommended.
- Take a good look at last year’s term exam 2 and its solution and at the 2001 term exam 2. All of these are available from last year’s Math 157 web site, <http://www.math.toronto.edu/~drorbn/classes/0203/157AnalysisI/>.
- It is much more fun to work in a group!

Remember. You *really* understand a mathematical definition / theorem / claim / lemma / anything only when you have fully internalized it and made it your own. Check if you can say to yourself one of the following:

- “Gosh this is so right. I would have done it in just the same way” (sometimes add: “if I was a little smarter when the issue first came up”).
- “Hey, I can do it better! Here’s how...”.

It’s worthwhile! Your grades will be higher, you will have gained more from this (and other) classes, and there is a lot of satisfaction and joy when you succeed. I internalized this sometime in my second year as an undergrad and it was the most important thing I learned that year.

Good Luck!!!

Augustin-Louis Cauchy

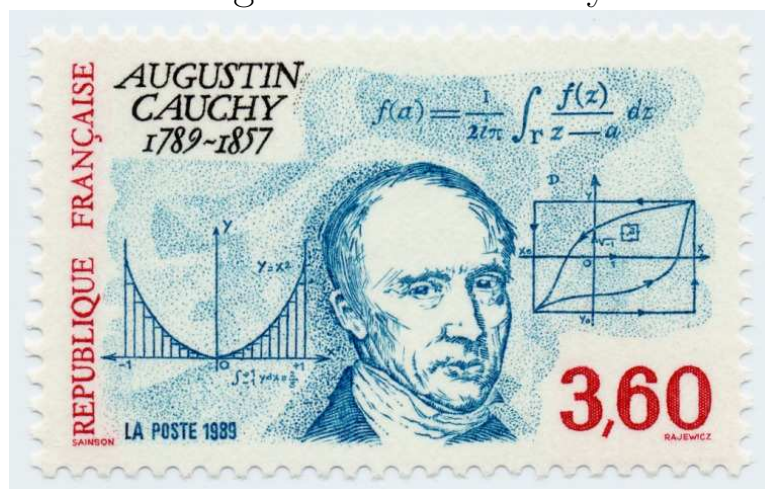


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