Math 419 Exam 1 Review (Fall 2009)

This exam will be designed to take a bit under an hour and will be a mix of computation and theory. I will draw the questions from the concepts listed below. Of course, if topic A requires knowledge of topic B (which is not on the list), you are expected to know about topic B, too. For example, I am listing that you should know how to differentiate polynomials, but that assumes that you know that you can pull constants through derivatives, which is not listed.

To prepare for the exam, I suggest that you read through your notes and review your homework (including my comments). In general, DON’T worry about proofs from class, but DO worry about proofs from the homework. Also, don’t worry about stuff in the book but not in the lectures.

Chapter 1
- Almost all of it. This is a bunch of basic manipulation, so you should know it pretty well now.
- Don’t worry about the binomial formula (p. 7), section 9, or section 10.
- There may be some basic manipulations to do on the exam, but this should certainly not be the only chapter you opt to study!

Chapter 2
- Again, most of it is important. Sections 15-22 and 24-27 are the main parts.
- Ignore sections 23 and 28.
- As for mappings, you don’t need to commit any particular example to memory, but you should know how to draw the image of a set in the domain that I provide (if I provide one).
- Know how the CREs work (and what they are!), but don’t worry about why they are necessary and sufficient.

Chapter 3
- Of course ignore sections 35 and 36 (since we skipped them).
- Make sure you are comfortable with exp (how to evaluate?), log (ditto), and the concepts of multiple-valued functions and branches. DO NOT worry about Riemann surfaces (section 99).
- For the trig functions, it would be good to know how to define them. I will provide any identities that you need.

Chapter 4
- Ignore sections 37 and 38. They are foundational but boring as all get out!
- Know about contours and contour integrals (including how to compute the latter), as in class.