Exam 2 Review, Math 30750

Exam 2 will cover sections 3.5-3.6, 4.1-4.3, 4.5 and 5.1-5.3, 6.1 and the part of 6.2 we cover on Monday. Of course, this builds on the earlier material, so you need to remember it but I won't test you explicitly on that. What should you expect on the exam? It will be similar to Exam 1. There will be a multipart problem asking you for examples. You will be asked to state at least one definition or theorem. There will be two or three statements for you to prove.

Major Terms

- differentiable, continuously differentiable, derivative

- pointwise convergence

- uniform convergence

- sup norm

- lim sup and lim inf

- infinite series of constants convergence, divergence

- geometric series

Major Theorems

- A bounded monotone function on a closed bounded interval is Riemann integrable. (Theorem 3.5.1)

- Mean Value Theorem

- Fundamental Theorem of Calculus (Parts I and II)

- Taylor's Theorem

- The inverse of a continuous strictly monotone function is continuous. (Theorem 4.5.1)

- The inverse of a continuously differentiable function with nowhere 0 derivative is continuously differentiable. (Corollary 4.5.3)

- Theorems on interchanging limiting operations under appropriate hypotheses (all involving uniform convergence): limit of a sequence and continuity, limit of sequence and integration, limit of sequence and differentiation a (Theorems 5.2.1-5.2.3)

- Comparison test if we get that far Monday

- Ratio test if we get that far Monday

- Root test if we get that far Monday