MATH 19B – Final Exam Details

The final exam will take place on **Friday December 13 from 1:30-4:15pm in our usual classroom (Perkins 300)**. The final is cumulative, and is closed notes & book. You are allowed a scientific or graphing calculator, but you are not permitted any other technology or resources. Expect the exam to be about 1x–1.5x the normal exam length.

Please note that academic integrity violations will be taken seriously, and will be met with serious consequences.

Topics to study

- **Chapter 5 ($\approx 30\%$)** – The indefinite integral/antiderivative is the "opposite" of the derivative. Basic integration rules, particular antiderivatives (solve for C), method of substitution, approximating area under a curve with rectangles, the definite integral & using The Fundamental Theorem of Calculus to compute definite integrals.
- **Chapter 2 ($\approx 25\%$)** – Limits: know properties of limits and how to evaluate them. One-sided vs two-sided limits. Infinite limits and limits at infinity. Derivatives: basic derivative properties. Limit definition of derivative.
- **Chapter 3 ($\approx 30\%$)**– Derivative of e^x and $\ln x$. Product, quotient, and chain rules. Implicit differentiation. Find equation of tangent line and find where tangent line is horizontal.
- **Chapter 4 ($\approx 15\%$)** – Use sign charts to find: where $f(x)$ is increasing/decreasing, local extrema, where $f(x)$ is concave up/concave down, points of inflection. Find absolute extrema. Use L'Hopital's rule to evaluate indeterminate limits.

The exam will be very similar to the practice exam.

Study resources:

- **Final Exam Practice Exam**
- MyLab Math review problem set (extra credit)
- Past assessments and solutions
- Your class notes
- I will announce extra office hours