Math 157-01
Final Exam Information

The final exam is scheduled for Wednesday, December 14, 10am–11:50am, in Room 4270. Special office hours during finals week:

- Monday, December 12: 12:00pm–1:00pm
- Tuesday, December 13: 10:00am–12:00pm
- Wednesday, December 14: 12:00pm–1:00pm
- Thursday, December 15: 12:00pm–1:00pm

Skills Checklist

1. Find the equation of a line (especially a tangent line).
2. Use tables of function values to estimate limits.
3. Compute limits by substitution. For example, $\lim_{x\to 3}(x^2 - 5x + 1)$.
4. Use algebra to determine limits of the form $\frac{0}{0}$. For example, $\lim_{x\to 1} \frac{x^2-1}{x-1}$
5. Use tables of function values to estimate derivatives.
6. Apply standard differentiation rules, including the chain rule for compositions of functions.
7. Interpret derivatives as slopes of tangent lines.
8. Interpret derivatives as rates of change.
9. Solve problems involving marginal revenues, marginal costs, and marginal profits.
10. Compute higher-order derivatives.
11. Find the global extrema of continuous functions on closed and bounded intervals.
12. Find critical points.
13. Apply the first derivative test to determine local extrema and open intervals on which a function is increasing/decreasing.
14. Apply the second derivative test to determine inflection points and open intervals on which a function's graph is concave up/down.
15. Set up and work out a straight forward optimization problem in a business context.
16. Use left and right sums to estimate accumulated quantities.
17. Use left and right sums to estimate definite integrals.

18. Apply standard antidifferentiation rules to evaluate indefinite integrals. Do not forget to include $+C$ with your antiderivatives.

19. Understand the relationship between $\int_a^b f(x)dx$ and the area of the region under the graph of f.

20. Know and use the basic properties of definite and indefinite integrals.

21. Use the Fundamental Theorem of Calculus to compute $\int_a^b f(x)dx$.

22. Use substitution to evaluate definite and indefinite integrals.