Math 165: Honors Calculus I
Topics for Final Exam *PCTR 102 8:00–10:00 A.M., Dec. 15, 1998*

The following list is an overview of the topics that may be covered on the final exam. When a topic is listed, all the definitions and named theorems associated with that topic are implied, although in some cases these have been separately emphasized.

- The natural numbers, induction
- Summation, the binomial theorem
- Partitions and step functions, integrals of step functions
- Supremum and infimum
- Definition of the integral
- Theorems about integrals
- Area and average
- Trig functions and identities
- Limits, one-sided limits, theorems about limits
- Continuity
- Balzano's Theorem and the Intermediate Value Theorem
- Inverse functions and their properties
- Mean Value Theorem for Integrals
- Derivative and their properties
- Power rule, higher derivatives, the chain rule
- Tangent lines
- Implicit derivatives
- Related rates
- Extreme values of differentiable functions
- Mean Value Theorem for Derivatives
- First and Second Derivative Tests for Extrema
- Convexity