

## 140 - Calculus I: Test 4 Study Guide

Henson - Fall 09

### TEST 4 TOPICS:

1. Finding the antiderivative of a function.
2. Finding the constant of integration "+C" given initial conditions.
3. Rewriting an integrand to find an antiderivative.
4. Properties of antiderivatives.
5. Compute the area under a curve using rectangles.
6. Find the Lower sum, Upper sum, Left hand sum, Right hand sum, etc. for the area under a curve.
7. Write the Riemann sum of a function over the interval  $[a,b]$ .
8. Compute a definite integral using the Fundamental Theorem of Calculus.
9. U-substitution for definite and indefinite integrals.
10. Use the Trapezoidal Rule to approximate the area under a curve.
11. Find the average value a function obtains over an interval.
12. The Second Fundamental Theorem of Calculus.
13. The definite integral written as a function of  $x$ .