Math 113-03
Topics to Review for Exam 2

**Indefinite Integrals and Antiderivatives:**
- Know all basic antiderivative rules
- Know how to evaluate indefinite integrals using substitution

**Definite Integrals**
- Know the definition of the definite integral
- Know how to find closed forms for sums
- Know how to approximate definite integrals using Riemann sums
- Know how to evaluate definite integrals using the definition of definite integral
- Know the statement of the Fundamental Theorem of Calculus
- Know how to evaluate definite integrals using the Fundamental Theorem of Calculus
- Know how to use the second part of the Fundamental Theorem of Calculus, i.e., how to differentiate functions of the form \( H(x) = \int_a^x f(t) \, dt \)
- Know how to find net signed area using definite integrals and vice-versa

**Applications of Definite Integrals**
- Know how to find the area between two curves using definite integrals
- Know how to find the volume of a solid of revolution using definite integrals
- Know how to calculate work using definite integrals

**Techniques of Integration**
- Know how to use substitution to evaluate definite integrals
- Know how to evaluate definite and indefinite integrals using integration by parts