Calculus 1, Chapter 5 Study Guide
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The following is a *brief* list of topics covered in Chapter 5 of *Thomas' Calculus*. Test questions will be chosen directly from the text. This list is not meant to be comprehensive, but only gives a list of several important topics. I reserve the right to ask you definitions and theorems on the tests. If I do so, then I will choose from the **bold-faced** items below.

5.1 Area and Estimating with Finite Sums. No!

5.2 Sigma Notation and Limits of Finite Sums. Sigma notation, Riemann sums (and included components such as partition and subinterval), norm.

5.3 The Definite Integral. Definite integral, difference between definite integral/indefinite integral/antiderivative, integrability of continuous functions and properties of definite integrals (Theorems 1 and 2), regular partition and use to calculate definite integrals, area under a curve, average value of a function.

5.4 The Fundamental Theorem of Calculus. Mean Value Theorem for Definite Integrals, **Fundamental Theorem of Calculus, Parts 1 and 2**, the Net Change Theorem.

5.5 Indefinite Integrals and the Substitution Method. u-substitution ("The Substitution Rule").

5.6 Substitution and Area Between Curves. Area between curves, dx and dy slices.