Math 160
Review Sheet for Exam IV
Friday 20 April 2012

The exam covers book Sections 3.9, 4.1-4.5, Appendix E. The specific topics are as follows:

1. Indefinite integrals using Basic Integration Rules 1-10. (3.9, 4.4)

2. Indefinite integrals using substitution. (4.5)

3. Σ notation and properties of sums. (App.E)

4. Connection between the definite integral $\int_a^b f(x)\,dx$ and signed area. (4.1, 4.2)

5. Approximating $\int_a^b f(x)\,dx$ by Riemann sums. (4.1, 4.2)

6. Formal definition of $\int_a^b f(x)\,dx$ and computing $\int_a^b f(x)\,dx$ using the definition. (4.2)

7. Fundamental Theorem of Calculus. (4.3)

8. Definite integrals using Basic Integration Rules 1-10. (4.3, 4.4)

9. Definite integrals by substitution. (4.5)

10. Symmetry Properties of $\int_a^b f(x)\,dx$. (4.5)

11. Relationship between $\int_a^x f(t)\,dt$ and $f(x)$. (4.3)

12. Comparison Properties of $\int_a^b f(x)\,dx$. (4.2)

13. Net Change Theorem. (4.4)