

LIST OF TOPICS FOR MATH 20B: MIDTERM 1

- Exam Date: 19 Oct 2012, usual lecture time.
- You must bring a Blue Book in which to write your exam.
- Please bring your UCSD student ID to the exam and expect it will be checked.
- You may bring one 8.5" \times 11" sheet of *handwritten* notes (front and back) to the exam.
- No calculators (or other electronic devices)!!

The exam will be based on the homework questions and lecture material, including all examples presented in class. To help guide your studying, make sure you are familiar with the following topics:

TOPICS

1. The definite integral:
 - (a) Definition in terms of limits of Riemann sums.
 - (b) Relationship to area.
 - (c) Properties of the definite integral. (Linearity, additivity, comparison theorem, etc.)
2. The Fundamental Theorem of Calculus, Parts I and II:
 - (a) Calculating definite integrals.
 - (b) Constructing antiderivatives.
3. Integration using the Method of Substitution.
4. Integration using the Integration by Parts formula.
5. The average value of a function.
6. The definite integral and rate of change.
7. The area between curves.
8. Finding volumes using the "slicing" technique.
9. Finding the volume of a solid of revolution (using the "disk method" and the "washer method").