Review sheet for exam 1

The best way to study for the exam is to learn how to do all of the listed practice problems. You can also pick through the problems in the chapter review sections. Here are some suggested problems from the review sections:

- Chapter 6: 1, 5, 7, 9, 13, 15, 19, 23, 30
- Chapter 7: 1-40 (skip around)

If you run out of problems, learn to do all of the problems in the book!
The following is a list of the topics that I think are important:

- 6.1: Area between curves
  - Know how to find the area between two curves
- 6.2: Volumes
  - Know how to find the volume of a solid with specified cross–sections.
  - Know how to use the washer/disk method to find volumes of revolution.
  - Be comfortable with solids obtained by rotating about any vertical or horizontal axis.
- 6.3: Volumes by cylindrical shells
  - Know how to compute volumes of revolution using the method of cylindrical shells.
  - Know how to use cylindrical shells to compute volumes of solids obtained by rotating about any vertical or horizontal axis.
- 6.5: Average value of a function
  - Be able to compute the average value of a function over an interval.
  - Know the mean value theorem for integrals.
- 7.1: Integration by parts
  - Be a master of integration by parts.
- 7.2: Trigonometric integrals
  - Know the various "straightforward" rules: odd power of sin or cos, what to do if there are only even powers of sin/cos, even powers of sec, odd power of tan, etc...

  - Be comfortable with dealing with integrals that don't fit exactly into one of the above rules.

- 7.3: Trigonometric substitution
  - Have the table for trig substitutions memorized.
  - Practice many types of trig substitution problems.

- 7.4: Partial fractions
  - Know the full recipe for partial fractions.
  - Know how to integrate the result of a partial fraction calculation.
  - Practice many types of partial fractions problems.

- 7.5: Strategy for integration
  - Practice integrals.