Review for Exam 1

Time and Places of Exam: The exam will be in class, on Thursday, Feb 13 2003.
Exam Materials: The exam is closed book. You can prepare a formula sheet: a single one-sided 8x11 sheet on which you can write whatever you like. You should bring a calculator.
Exam Coverage: Questions for the exam will be based on material in the following sections of your textbook:

Chapter 2 Entire chapter.

Chapter 3 Sections 2-8.

Chapter 4 Sections 1-10.

Chapter 5 Sections 1-9.

Here is an outline of the main concepts which you should understand. This list may not be complete, but I think it comes close to being complete:

Descriptive Statistics (Chapter 2):

- Types of data: qualitative and quantitative
- population and sample
- parameter and statistics
- mean, variance and standard deviation of a sample
- median, lower (upper) quartile and 100pth percentile
- z-score, IQR and outliers
- Boxplot, histogram and bar plot

Probability (Chapter 3):

- Sample space, simple events, compound events (union, intersection and complement)
- Probability, conditional probability, probability rule for compound events
- Independence and mutually exclusive
- Bayes theorem
- Counting rules

Random Variables (Chapter 4-5):

- Discrete or continuous
- Probability distribution: probability mass function (discrete), probability density (continuous)

- Cumulative distribution function and its use in calculating probabilities for continuous random variables
- Mean, variance, standard deviation and expectation of functions of random variables
- Important examples of discrete random variables: Bernoulli, binomial, discrete uniform, geometric, Poisson
- Important examples of continuous random variables: uniform, normal and exponential
- Calculation of normal probabilities using the standard normal random variable and the table in Appendix

Everyone has their own approach to study, but here's some (unsolicited) advice:

1. Go through the outline of concepts above and make sure you understand them (if not, find the definition in the textbook or the lecture notes).
2. Go over the homework solutions.
3. Do some of the unassigned problems, particularly the supplemental problems at the ends of chapter 3-5.