Math 121 - Midterm 1 Suggested Study Problems

Here are problems that are similar to the ones you might see on the exam. Be sure to also review old homework and quiz questions too. The exam will have both multiple choice and short answer questions.

Visualizing Data Cht. 1# 1.13, 1.15, 1.17, 1.19, 1.21

Make sure you know the difference between stem-and-leaf plots and box-and-whisker plots.

Describing Data Cht. 2# 2.15, 2.17, 2.19, 2.21, 2.23

I will probably ask one question where you have to calculate a sample standard deviation by hand (without a calculator!) Make sure you can do this. Try it with these numbers:

$$101, \quad 101, \quad 94, \quad 95, \quad 109.$$

What is the mean $\bar{x}$ and what is standard deviation s? (You should get $\bar{x} = 100, s = 6$.)

Normal Distributions Cht. 3# 3.15, 3.17, 3.19, 3.21, 3.23

Basic Probability Cht. 10# 10.21, 10.23, 10.25, 10.27, 10.29

Probability Rules Cht. 12# 12.17, 12.19, 12.21, 12.23, 12.25

Binomial Distribution Cht. 13# 13.13, 13.15, 13.17, 13.19, 13.21

The book doesn't talk about generating functions, but has a different formula for binomial probabilities. You don't need to worry about the book's formula, I won't ask about it on the test. I might ask you to write down the generating function (without expanding it) for a binomial distribution. You should try this for problem 13.17 above.

Sampling Cht. 8# 8.17, 8.23, 8.43

Make sure you know the difference between random error and bias. What is the best way to avoid bias? What is the best way to minimize random error?

Experiments Cht. 9# 9.19, 9.21, 9.23, 9.25, 9.27

Know the difference between explanatory variables, response variables, and lurking variables.

Sampling Distributions Cht. 11# 11.15, 11.17, 11.19, 11.21

Know the difference between the Law of Large Numbers and the Central Limit Theorem. I will ask questions about both.

Terminology The end of each chapter has a one page chapter summary. Make sure you read this, and are familiar with all of the terms that are mentioned in bold-face.