Math 28 Study Guide for Final Exam

The Final Exam will cover the topics listed on the three previous study guides (available on the Web), as well as the material from Sections 7.2, 8.2, and 8.3 covered in class (see below). The problems will be similar to those on your previous tests and homework.

Proofs will be chosen from those listed below.

**New Topics** (not on previously tests)

7.2 Expectation of a Sum of Random Variables
   - Know how to compute $E[g(X,Y)]$ in the discrete and continuous cases.
   - Be able to use $E[X_1 + \ldots + X_n] = E[X_1] + \ldots + E[X_n]$

8.2 Markov’s and Chebychev’s Inequalities
   - Be able to state and use Markov’s and Chebychev’s Inequalities
   - Know the definition of the sample mean $\bar{X}$
   - Know the statement of the Weak Law of Large Numbers

8.3 Central Limit Theorem
   - Be able to state and use the Central Limit Theorem

**Proofs to Know**

- Be able to prove Chebychev’s Inequality from Markov’s Inequality
- Be able to prove the Weak Law of Large Numbers from Chebychev’s Inequality

**Suggestions:**

Study your class notes, previous tests, homework, and study guides from the three tests. Then do the practice exam, but do not use the practice exam as a substitute for studying the other material.