COS 341, September 17, 1997
Handout Number 2

Homework Set 1

Written Assignments Read Chapter 1, Chapter 3.
Written Assignments Do Exercises 3, 4, 7, 12, 22, 28 in Section 1.8.
Special Problem 1 (to be counted as 2 exercises) In class, we demonstrated that for the Monte-Hall Problem the "switch" strategy is better than the "non-switch". Give a precise mathematical description of the probability space, the *event* of winning a holiday in each strategy, and compute the probability for the event (for each strategy). (The answers should be 2/3 and 1/3 for the two strategies.)
Hint One can take as Universe the set of all triplets (x_1, x_2, x_3) where x_1, x_2, x_3 represent, respectively, the door Monte chooses to hide the "Holidays," the door the contestant picks, and the "Donkey" door Monte shows to the contestant.
Special Problem 2 (to be counted as 2 exercises; you may use the computer if you wish) Let $n = 10^3$ be the number of candidates in the Hiring Problem. Let p_k be the probability of hiring the best candidate under "strategy k".
(a) What's the optimum k to use (in the sense of maximizing p_k)? What's the value of this optimum p_k (accurate to three digits)?
(b) Give a rigorous proof that this is the optimum k to use. (This part is harder.)