Some ground rules for homeworks and exams:

Write your homework answers on the sheets supplied. If necessary, you can get new sheets on the class web site.

All homework and examination items are answered with a limitation on space. Limitations on the homework items are typical of those on examination items. Ordinarily, one-half page is allowed. Sometimes a word limit is also set. Write the best answer that you can in the space available. Writing that is illegible or unreasonably tiny is penalized.

In most items, you will know more than you can fit in the space. You must decide which parts are important enough to write down. It helps to outline the answer before writing it. It also helps to key the text to the diagrams, tables, and equations, and you should practice this technique in the homeworks and in your preparation for examinations.

In preparing homeworks or examination answers, it is best not to leave blank space. You may think that you have answered sufficiently without using all of the space, and you may be eager to go on to the next problem. Instead, reflect on the problem and explain the answer a bit more deeply.

Why these restrictions? I hate to evaluate long meandering answers, and I like homeworks that I can handle efficiently. The format allows me to give more attention to your response. Since the exams in this course always have space limitations, it is appropriate for you to prepare by doing homeworks that follow the same rules.
Theory of Finance, 234B  
Problem Set #1, Due April 5, 2005

1. Here is a variation of the Monty Hall game. The contestant faces four doors. Behind one door is the prize. The other doors lead to empty rooms. The contestant chooses one door. The master of ceremonies then opens two doors that lead to empty rooms, but he does not open the chosen door. Now the contestant has an opportunity to switch her choice of doors.

A. In words, why is it best for the contestant to switch doors?

B. What is the probability of winning the prize if the contestant does not switch? What is the probability of winning the prize if the contestant does switch? Explain.

2. (Like 5.5 in the text) A bond with a semi-annual (twice a year) coupon payment is sold for $1160.584, which is above its par value of $1000. The bond is 12 years to maturity and the yield currently required by the market for such bonds is seven percent. Show how to solve for the coupon rate for the bond. Show that it is nine percent. (Hint: As usual, you may assume that the next coupon payment is due in exactly six months.)
3. (Like 4.37 in the text). On November 1, 2003, Mike White bought a BMW for $50,000. He paid $5,000 down and financed the balance with a five-year loan at an interest rate of 5 percent, compounded monthly (in this market, 5 percent per year means $0.05/12 = 0.4166667$ percent per month). The first monthly payment was made exactly one month after the purchase. In October 2005 Mike inherited some money and decide to pay off the loan on November 1. The bank charges him a prepayment penalty amounting to 1% of the principal balance. How much does he pay the bank on November 1. (Hint: As usual, start with a time-line showing the timing of cash flows. This is a good problem to put in a spreadsheet. You may paste or tape an appropriate part of the spreadsheet to this page.)