Intermediate Microeconomics
Fall 2002
Assignment 6

Due Date: Monday, October 21

Be sure to show all of your work and clearly indicate your final response to each question. For exercises from the workbook you can hand in the completed workbook pages or provide the answers on separate sheets of paper. Please be sure that your homework is stapled before handing it in.

1. An individual has utility defined over income, $U(I) = I^{\alpha}$, $\alpha \in (0, 1]$. The individual can choose between one of two occupations, A or B. In either occupation income is a random variable. In occupation A the individual may earn 100 with probability .5 or 200 with probability .5. In occupation B the individual may earn 0 with probability .5 and $\hat{w}$ with probability .5, where $\hat{w} > 0$.

   (a) If $\hat{w} < 300$ and $\alpha < 1$, determine which occupation the individual will choose.

   (b) Find the value of $\hat{w}$ which will make the individual indifferent between choosing occupation A or B.

   (c) Using the value of $\hat{w}$ you determined in the section immediately above solve the occupational choice problem for an individual with $\alpha = 1$

2. An individual can invest a portion of her income endowment I in a risky asset - let the amount invested be denoted $x\,(x \in [0, I])$. The investment pays 1.4 per dollar invested with probability .5 and pays .8 per dollar invested with probability .5. If the individual's utility function is defined over "realized" income as $\ln(\tilde{I})$ and her initial income endowment is 10, how much will she invest in the risky asset (x^*)?

3. Reconsider Problem 2. How much does she invest in the risky asset if:

   (a) the government imposes a tax of 20 percent on all investment income?

   (b) the government only taxes (at a rate of 20 percent) capital gains and not losses?

4. WIM 15.0

5. WIM 15.1

6. WIM 15.4