Economics 500: Microeconomic Theory

State University of New York at Binghamton
Department of Economics
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Problem Set #9

1. Offer an example of both adverse selection and moral hazard in production. Discuss the related impact on market outcomes of each of these examples.

2. When there is asymmetric information regarding how hard workers work, equilibrium in the labor market may contain efficiency wages and involuntary unemployment. Explain. Why don't firms reduce wage they pay workers in response to the excess supply of labor?

3. A machine that costs 100 will yield returns of 30 at the end of each of the next 3 years, at which time it will be sold as scrap for 30. If the interest rate facing this firm is 10 percent (note that it does not change over time), should it purchase this machine? Now suppose the interest rate decreases by ten percent each year, should it purchase this machine?

4. Assume an individual expects to work for 40 years and then retire with a life expectancy of an additional 20 years. Suppose also that the individual's earning rise at a rate of 3 percent per year and that the interest rate is also 3 percent (the overall price level is constant in this problem). What (constant) fraction of income must the individual save in each working year to be able to finance a level of retirement income equal to 60 percent of earnings in the year just prior to retirement?

5. Suppose that a monopoly farmer of Wonder Grain must pay all of its costs of production in this year but that it must wait until next year to sell its output. Why would the farm's profit-maximizing output level be the level for which MR = MC (1 + r)? Explain why this profit-maximizing condition takes all costs into account. Would this farmer produce more or less output if he or she could defer paying costs until next period? Explain why the firm should also hire any input, such as labor, up to the point at which $MP_L = w^*(1 + r)$.