Homework 8 20 Points

1. (4) Using a game theoretic approach, explain why a firm would produce a greater quantity than the quantity where marginal revenue equals marginal cost (you still must assume that the firm is maximizing profit and is choosing quantity).

Answers can vary for this problem. One example of a firm producing a quantity that is greater than the quantity where marginal revenue equals marginal cost is a firm who is participating in limit pricing. A firm would choose to charge a price (and produce the corresponding market demand) just low enough to keep other firms out of the market (and thus being the only firm, creating a profit maximizing strategy). Your example must address the strategic decision of the firm and how a profit maximizing strategy is achieved.

2. (4) The following features firms attempting to maximize profits by choosing a price. Consider a market with two firms and a market demand function given as \( P(Q) = 1000 - Q \), where \( Q \) is the combined output of two firms. Assume each firm has a constant marginal cost of 100, no fixed costs, and the products are homogeneous. Finally assume firms can change prices in one dollar increments. List a Nash Equilibrium in this example. Explain why this equilibrium is a Nash Equilibrium.

A Nash equilibrium in this example is to charge a price of \$101. If one firm charges \$101, then the other firm can charge a price greater than \$101 (resulting in zero profits because of zero sales), a price of \$100 (resulting in zero profits), a price less than \$100 (resulting in profits less than zero because price is less than ATC), or a price equal to \$101 (where profits will be greater than zero because price is greater than ATC and quantity is greater than zero). Thus, there is no incentive for the other firm to change its pricing strategy of \$101.

3. (6) Pick a market where imperfect information exists. Explain what prevents perfect information in the market and how the market outcome is affected by the imperfection. Are there any features of the market that allow for consumers and/or producers to provide additional information? If so explain.

Answers can once again vary. One example we talked about is the labor market and the fact that the purchaser (employer) is uncertain of the marginal benefit that it will receive from the supplier (the worker). Given this uncertainty, employers will offer wages that are not necessarily equal to the marginal benefit of the unit of work. Potential employees try to reveal information to the employers by listing items on a resume or vita. Employers may call references or conduct interviews in an attempt to gain more information about the potential employee.
4. (6) List and explain three reasons why the supply and demand for money (the market that determines the interest rate) could fail to prevent the misallocation of resources over time.

The general assertion is that if we had a perfectly informed, competitive market for loanable funds, the interest rate would serve as a tool for the efficient allocation of resources over time (by appropriately representing the opportunity cost of money). The following could hinder the interest rate in that role.

a. Government involvement in the market for loanable funds. Through monetary policy, the government can alter the perfectly competitive outcome in the market. The government's objective may be something other than the efficient allocation of resources over time.

b. People place a disproportionate amount of importance on the present. A person's overall desire for present day consumption prevents the marginal social benefit and marginal social cost of money to be represented in the supply and demand of loanable funds.

c. An individual incurs more risk in borrowing money than society does. Society will often times still enjoy the benefits from investment even when an individual investor has failed with the investment.