Problem Set 5: Econ 460   Binglin Gong
Due Dec. 1, 2004

1. (Asymmetric Information about Quality)
Suppose you are in the market for a used car. You cannot assess the quality of a car before you purchase it, but the seller does know the quality of a car. Because of the way the previous owner(s) drove the car, along with other factors, it turns out that half of all used cars are good quality (with value to you of $12,000). The other half of all used cars are poor quality (with value to you of $6,000). You are risk neutral.
a) What is the value to you of a randomly selected used car?
b) Suppose you pay your valuation from part a), so that the price in the market is equal to your expected value of a randomly selected used car. Which cars are sold at this price?
c) Once you realize the answer to part b), what happens to price in the market?
d) What are some ways around the lemons" problem that firms actually use in real life?
e) What is the difference between adverse selection and moral hazard?

2. Every night, all 60 inhabitants of a tiny village visit one of the village's two taverns (not necessarily the same tavern) and an average of 10 strangers do the same. Both the villagers and the strangers are willing to pay up to $3 for a drink, and no one ever buys more than one. But, whereas the strangers pick either of the taverns at random, the villagers compare prices and go where the drinks are the cheapest. If the market is in free entry equilibrium and each Tavern's costs of providing q drinks a night are $C(q)=36.75+0.1q+0.03(q^2)$, what do the taverns charge for a drink? What happens if the village suddenly becomes a tourist attraction and an average of 75 strangers visit every night?

3. A picturesque fishing village is visited by 20,000 tourists every year and all of them have lunch just once at one of the village's seafood restaurants. The 4,000 inhabitants of the village also eat lunch at one of the restaurants once a year on their birthday. Although the tourists pick a restaurant at random, the villagers go to the cheapest one. If the restaurant's costs of preparing q meals a year are $C(q)=32,000+10q+0.0005(q^2)$, and both villagers and tourists are willing to pay at most $20 for a meal, how many restaurants are there in an equilibrium and how much do they charge for their meals? If there are high price and low price firms, find the numbers of each respectively. What happens if the village population doubles to 8,000?

4. Suppose the government discontinues a certification program that allows consumers to differentiate good laptops from bad ones. Consumers cannot tell the difference otherwise, but the sellers know which type of computer they have in their possession. Show *graphically* the likely effect on the market of the two types of laptops (the demand curves, or say, consumers' willingness to pay).