ECON 522 - SOLUTIONS TO TA REVIEW

1. Contract Law

Damages (C & U 7.1) A buyer (B) pays \$10,000 to a New Orleans grain dealer (D) in exchange for D's promise to deliver grain to B's office in London on October 1st. As a result of signing the contract, B decides not to sign a similar contract with another dealer for \$10,500.

B signs a shipping deal with shipper S, and pays a non-refundable \$100 docking fee to the shipper. B signs a contract to sell the grain to a third party for \$11,000.

En route the grain is damaged, and the dealer backs out of the contract and sells the damaged grain to a cattle rancher for \$500. B buys the equivalent grain form some other party for \$12,000.

a. What would expectation damages be for D's breach of contract?

By definition, expectation damages must leave the buyer indifferent between having the initial dealer uphold the contract and having the dealer breach the contract. Thus, the payoff for B after breach must be same as the payoff for B if there were no breach:

$$\text{Payoff after breach} = \text{Payoff from original contract} \tag{1}$$
$$11,000 - 12,000 - 100 + D = 11,000 - 10,000 - 100 \tag{2}$$
$$-1,100 + D = 900 \tag{3}$$
$$D = \$2,000 \tag{4}$$

The payoffs on the lefthand side of (2) come from the \$11,000 sell price, the \$12,000 buy price (after the contract was breached), the \$100 docking fee, and the damages D. The righthand side of (2) is the same except that the buy price is \$10,000 and there are no damages.

b. Reliance damages?

By definition, reliance damages must make the buyer indifferent between breach and never having signed any contract (i.e. they must give the buyer a payoff of zero):

$$\text{Payoff after breach} = \text{Payoff from no contract} \tag{5}$$
$$11,000 - 12,000 - 100 + D = 0 \tag{6}$$
$$-1,100 + D = 0 \tag{7}$$
$$D = \$1,100 \tag{8}$$

c. Opportunity cost damages?

By definition, opportunity cost damages must make the buyer indifferent between breach and having signed the next best contract originally:

$$\text{Payoff after breach} = \text{Payoff from no contract} \tag{9}$$
$$11,000 - 12,000 - 100 + D = 11,000 - 10,500 - 100 \tag{10}$$
$$-1,100 + D = 400 \tag{11}$$
$$D = \$1,500 \tag{12}$$

2. Tort Law

At a specific restaurant there is a 1% chance of food poisoning that would cause $1,000 in damage to the victim. There are three potential customers, who have values of $10, $15, and $20 for a meal at this restaurant. Suppose initially there is no liability rule if someone gets sick, and the menu cost of the meal is $8.

a. What is the efficient activity level (how many people should be eating at this restaurant)?

It is efficient to eat at the restaurant if your benefit from the meal is greater than the social cost. The total social cost of the meal is the $8 menu price plus the expected cost of getting sick, which is (.01)($1,000)=$10. Thus it's efficient to buy the meal if you value the meal more than 10+8=$18. In this economy there is only one person who values the meal this much, the $20 guy, thus the efficient activity level is that one person (the $20 guy) should buy the meal.

b. How many people will choose to eat here if they are fully aware of the risk? If they are not aware of the risk?

If customers are fully aware of the risk, then everyone realizes that the true (private) cost of the meal is $18, and thus only the $20 guy buys the meal, which is efficient. If they do not perceive the risk, then they all believe the true (private) cost to be $8, and thus all three individuals buy the meal, which is not efficient.

At a specific restaurant there is a 1% chance of food poisoning that would cause $1,000 in damage to the victim. There are three potential customers, who have values of $10, $15, and $20 for a meal at this restaurant. Suppose the rule is strict liability, and the market is competitive.

a. How many people will choose to eat here if they are fully aware of the risk? If they are not aware of the risk?

In a competitive market the menu price of the meal must be the marginal cost of the meal. Under a rule of strict liability the restaurant is always liable when someone gets sick, and thus the cost of getting sick is part of the marginal cost of producing the meal: every meal that the

restaurant sells costs them \$10 in expected damages that it must pay. Thus the marginal cost of selling the meal is the \$8 production cost plus the \$10 cost of expected damages, for a total of \$18. Therefore, regardless of the awareness of risk, only the \$20 guy buys the meal (which is efficient).

3. Legal Process

Suppose a plaintiff expects to win \$10,000 with probability 5% and \$0 otherwise. The cost of a trial for the plaintiff is \$2000, while the cost of a trial for the defendant is \$6,000.

a. What are the threat points, gains from cooperation, and payoffs if the two sides decide to settle and split the gains (assuming the outside option is to go to trial)?

   By definition, a threat point is the payoff from the next best option (the payoff from not bargaining), and here I'm assuming that going to court is the next best option. Thus the threat points are:

   Plaintiff: $(.05)(10,000) - 2,000 = -\$1,500$

   Defendant: $-(.05)(10,000) - 6,000 = -\$6,500$

   In this type of problem, the gains from cooperation are the costs avoided by not going to court, which in this case is the \$2,000 fees for the plaintiff and the \$6,000 fees for the defendant, for a total of \$8,000. If they split the gains evenly and settle, then each individual should get $\frac{1}{2}8,000 = \$4,000$ more than their threat point. Thus payoffs are:

   Plaintiff: $-\$1,500 + \$4,000 = \$2,500$

   Defendant: $-\$6,500 + \$4,000 = -\$2,500$

   And the settlement is \$2,500.

b. Is the threat of a lawsuit from the plaintiff credible? This is what is called a nuisance suit, since the plaintiff actually expects to lose money by going to trial. Given this, the defendant may decide that the plaintiff will not actually go through with the lawsuit even if they do not settle. Thus the threat of going to trial may not be credible. This is analogous to the market entry game that we saw earlier in the semester: although it is a Nash equilibrium to settle before going to trial, it is not a sub-game perfect equilibrium.

4. Property Law

The government is interested in acquiring land to build a school. The school will be a public good, creating $5,000,000 in total value. The land the government wants to build on is currently privately owned. First, suppose the land is made up of 30 small plots, each one owned by a different owner. Each owner values his own land at $100,000.

a.

b. If the fair market value is $90,000 per plot, would the government's use of eminent domain be efficient?

Now suppose the land is occupied by one owner, a real estate developer, who values the land at $10 million.

a.

b. If the fair market value is $2.7 million, would the government's use of eminent domain be efficient?

Since this was a past exam question that we've gone over before I just want to emphasize the answers to the (b) questions. The point of this problem is that the value of the transfers from the government to the private land owners is irrelevant for efficiency: all that matters is that whoever values the land the most is the owner of the land. In the first part of the problem, if the government decides to use its eminent domain power, then each individual land owner is losing $10,000, but this in itself is not relevant for efficiency. What matters is that the total value of the land under the original owners, $30 \times 100,000 = \$3$ million, is less than the $5 million that the public values the land, and thus it's efficient for the public to own the land, even if the government did not compensate the owners at all, or even if it forced the owners to pay fee before leaving the land. This is ignoring any long term dynamics/incentives that rules like this might create; within the scope of this problem, all that matters is that the public values the land more than the original private owners, and thus efficiency requires that the public owns the land. In the second part of the problem, the original owner values the land more than the public, and thus it would be inefficient for the public to own the land.