

Whitman College
 Econ 328
 Exam 3
 November 17, 2010

Write all answers in your blue book. Show **all of your work**, including all of the calculations. The exam ends at 10:55.

1. Consider a contractual setting in which the technology of the relationship is given by the following partnership game. Suppose that the players contract in a setting of court-imposed breach remedies. The players can write a formal contract specifying the strategy profile they each intend to play. The court observes their behavior in the underlying game and, if one or both of them cheats, imposes a breach transfer. Assume that in the event of a breach, the court can verify which player breached. The players wish to support the investment outcome (I,I).

		Player 2	
		I	N
Player 1	I	9, 14	1, 15
	N	11, 5	6, 6

(a) (8pts) Write the matrix representing the induced game under the assumption that the court imposes expectations damages. Can a contract specifying (I,I) be enforced? Explain.

(b) (8pts) Write the matrix representing the induced game under the assumption that the court imposes reliance damages. Can a contract specifying (I,I) be enforced? Explain.

(c) (8pts) Write the matrix representing the induced game under the assumption that the court imposes restitution damages. Can a contract specifying (I,I) be enforced? Explain.

(d) (6pts) Suppose litigation is costly. When a contract is breached, each player has to pay a court fee of c in addition to the reliance transfer imposed by the court. Write a matrix representing the induced game. Under what condition on c can (I,I) be enforced with reliance transfers and court costs?

(e) (5pts) In the real world, courts know that expectations damages are the ideal court remedy. So why do courts typically use reliance damages rather than expectations damages?

2. Consider the following sequential-move von Stackelberg duopoly quantity-setting game. Firms 1 and 2 sell a homogeneous product at a price set by the market according to the following market demand function: $P = 100 - 2(Q_1 + Q_2)$, where Q_1 is Firm 1's output, and Q_2 is Firm 2's output. Firm 1 has a constant marginal cost of 12 and no fixed costs. Firm 2 has a constant marginal cost of 20 and no fixed costs. Firm 1 will contract with its suppliers and commit to producing its output before Firm 2 can choose its level of output.

- (a) (35pts) What is the subgame perfect Nash equilibrium (SPE) strategy profile for this game?
- (b) (5pts) How much profit does each firm make in the SPE?

3. Consider the standard bargaining problem with the following set of payoff vectors, V , defining two players' alternatives. $V = \{(10, 13), (3, 4), (2, 1)\}$. Here, the default payoff vector is $(2, 1)$. Suppose that player 1 has a bargaining weight of $\pi_1 = 0.6$. Assume transferable utility.

- (a) (15pts) Calculate the payoffs for each player in the standard bargaining solution outcome.
- (b) (15pts) Suppose Player 2 discovers that Player 1's default payoff is going to increase to $d_1 = 10$. That is, he finds out that the default payoff vector will become $(10, 1)$ instead of $(2, 1)$, with all else unchanged. Player 2 also discovers that with some effort, he could prevent that increase from happening. How much would Player 2 be willing to pay to prevent that increase? Explain your work.