

ECO 300 – MICROECONOMIC THEORY – FALL 2005
QUESTIONS FOR PRECEPTS WEEK 11 – DECEMBER 7

GAME THEORY

In the movie “The Princess Bride,” the hero (Westley) challenges a villain (Vizzini) to a battle of wits. Westley will poison one of two wine cups out of Vizzini’s sight. Then Vizzini chooses from which cup he will drink; Westley must drink from the other cup.

(a) Even though Westley moves first and Vizzini moves second, this should be regarded as a simultaneous-move game. Why?

Label the cups A and B and give a player the payoff 1 if alive and 0 if dead; then the game has the payoff matrix

		Vizzini	
		Drink from A	Drink from B
Westley	Poison A	1 , 0	0 , 1
	Poison B	0 , 1	1 , 0

- (b) Is this a zero-sum game, constant sum game, or variable sum game?
(c) Does it have a Nash equilibrium in pure strategies?
(d) How would you find a Nash equilibrium in mixed strategies? (Consult P-R p. 482)
(e) In the actual movie, it turns out that Westley had poisoned both cups; he was immune to that poison. How does this change the game?

MORAL HAZARD AND THE DESIGN OF INCENTIVES

1. Think of a college course as a principal-agent problem; the professor is the principal and the students are the agents. The students’ objective is to get a good grade; the professor’s objective is to get the students to learn the subject well. Therefore the professor has to design the incentive structure to align the students’ objectives to his own as best as can be done, that is, to ensure that a good grade is obtained only by learning the material well. Think of various possible solutions to this problem, and discuss their relative merits. Think carefully; Martin will give me a summary report on the discussion, and if any good new suggestions emerge, I will implement them in future years.

2. I recently had to correct the page proofs of a 600-page book. (For those of you who don’t know what this entails, it means reading in parallel my manuscript and the typesetter’s rendering of it, to find correct the errors that the typesetter had committed so as to get them corrected.) I was very busy with preparation of lectures, precepts, and problem set materials for that term’s ECO 310; therefore I had to hire a student to do the proofreading for me. When it came to devising a contract of work and payment for this job, I had to recognize some problems of information asymmetry. What are they? How can a payment scheme attempt to cope with them?