Klausur:	**Bargaining, Arbitration, Mediation**	**Sommersemester 2010**
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Permitted aid: Pocket calculator (non–programmable)

This exam comprises 3 exercises. Answer all of them.

Exercise 1 (20 minutes):

Please indicate on your answer sheet whether the following statements are true (**T**) or false (**F**). Each correct answer yields **2 points**, incorrect answers yield **-1 points**, and no answer results in **0 points**.

1) With an infinite horizon, alternating offers Rubinstein game between two players, there is always a first mover advantage.
2) A mediator who is employed after a break-down of negotiations can impose a settlement.
3) In an Edgeworth-box, if the initial endowment is located on the contract curve there is no room for Pareto-improvement.
4) The axioms on which Nash based his Nash bargaining solution include individual rationality and Pareto efficiency.
5) Nash (1950) has shown that, if the solution of an asymmetric bargaining problem satisfies certain axioms, then this solution is unique and maximizes the Nash product.
6) According to the Nash bargaining solution, the outcome of a player, ceteris paribus, is increasing in the other party's threat point.
7) A player's risk attitude has no influence on the slope of the Pareto frontier in Nash bargaining.
8) Axiomatic bargaining theory allows for predicting the outcome of negotiations without specifying the bargaining procedure.
9) In game theory, the term "strategy" describes an action taken by a player at one specific point in time during the play of a game.
10) Laboratory experiments showed that, in the Ultimatum game, subjects in general split the amount at stake according to the subgame perfect equilibrium.

Exercise 2 (16 minutes):

Two players, A and B, bargain over how to split a pie. In any of the games it is player A who makes the first offer. Both players receive nothing if negotiations fail. Draw the game tree and find the subgame perfect equilibrium shares.

a) The players face two bargaining rounds. In round 1 the pie amounts to 200 MU (monetary units), in round 2 its size reduces to 50 MU.

b) The pie size is 100 chips worth $2 each. Consider two rounds of bargaining. A and B have equal discount rates of $\delta = 0.25$, i.e., any payoff x is worth δx after one rejection.

Exercise 3 (24 minutes):

A monopolistic firm F transforms a single input factor L into a good Y. The production function is $Y(L) = L$. The inverse demand for Y is $p(Y) = 50 - Y$, where p denotes the price for Y. The firm is risk-neutral, payoff-maximizing and rational. Further assume that the input factor L is sold by a monopoly supplier U who seeks to maximize her revenues wL, where w denotes the factor price.

a) Derive the efficient input level L^*.

b) Specify both parties' payoff functions.

Assume that L is set to $L = 25$ in the following.

c) The parties now bargain over w. In the event of no settlement, both parties earn nothing. What is the optimal wage rate w^* according to the Nash bargaining solution?

d) Assume that negotiations in c) broke down and the two parties now employ an arbiter who executes conventional arbitration. The arbiter A offers her services for free. Both parties can simultaneously propose a wage rate to the arbiter. Denote F's proposal by w_F and that of U by w_U. A is impartial by assumption and imposes the average of the two proposals as a settlement. What are the Nash equilibrium wage rates submitted by F and U, respectively? What is the settlement w_A imposed by A?

e) Do any of the two parties F or U have an interest in contracting upon conventional arbitration as executed in d) before starting to bargain in c)? Why, or why not?