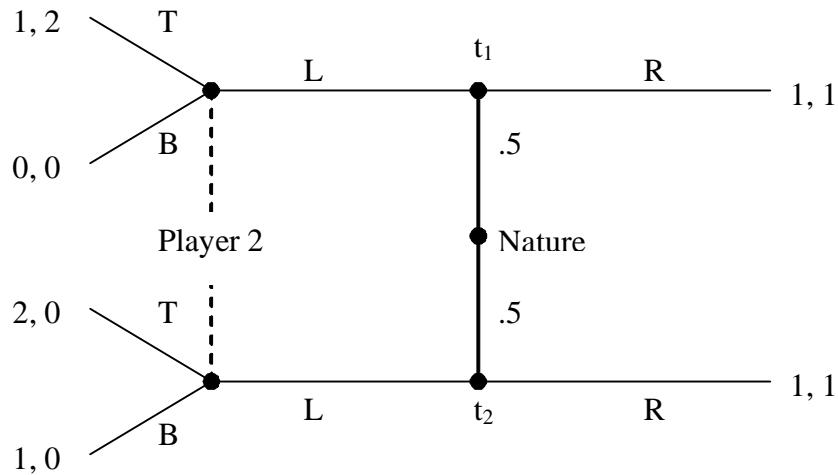
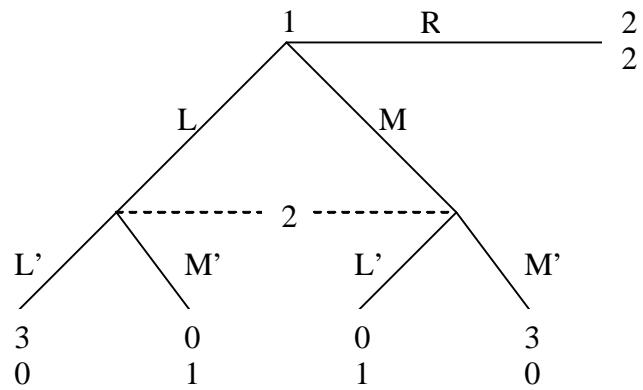


Game Theory
Problem Set 10

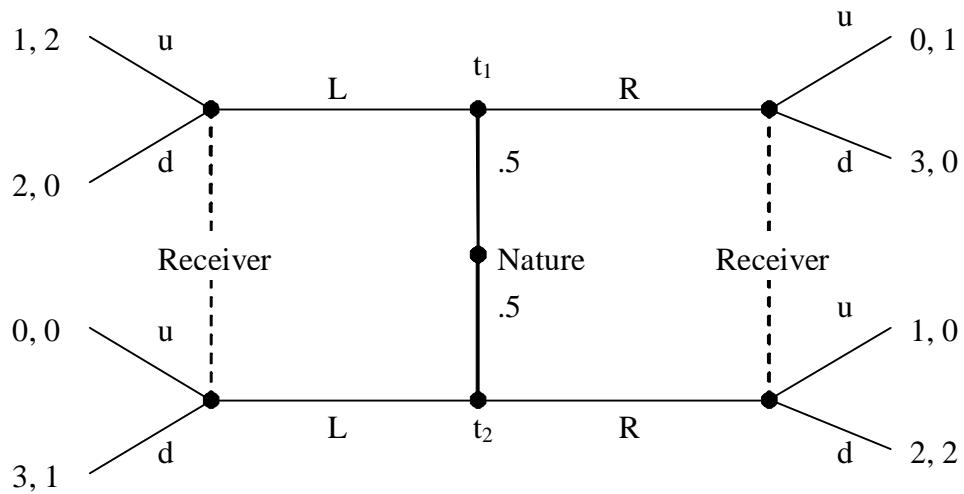
1. In the following game, nature first chooses one of two types of player 1 (in the figure, the two types are denoted t_1 and t_2). Each type is chosen with equal probability. Player 1 observes her type and decides whether to choose L or R. If player 1 chooses R, the game ends. However, if player 1 chooses L, player 2 has to choose between T and B (without knowing the type of player 1). Find all sequential equilibria, in pure and mixed strategies.



2. In the following extensive-form game, player 1 moves first. If player 1 chooses R, the game ends. If player 1 chooses L or M, player chooses between L' and R', without observing player 1's choice between L and M. The payoffs are indicated at the terminal nodes, with player 1's payoff first. Show that there does not exist a pure-strategy perfect Bayesian equilibrium. What is the mixed-strategy perfect Bayesian equilibrium?



3. (a) Find all the pure-strategy perfect Bayesian equilibria in the following extensive-form game, where nature chooses one of two sender types with equal probability, the sender chooses between L and R, and the receiver chooses between u and d.



- (b) Find all the pure-strategy perfect Bayesian equilibria in the following extensive-form game, where nature chooses one of three sender types with equal probability (i.e. each with probability $1/3$), the sender chooses between L and R, and the receiver chooses between u and d.

