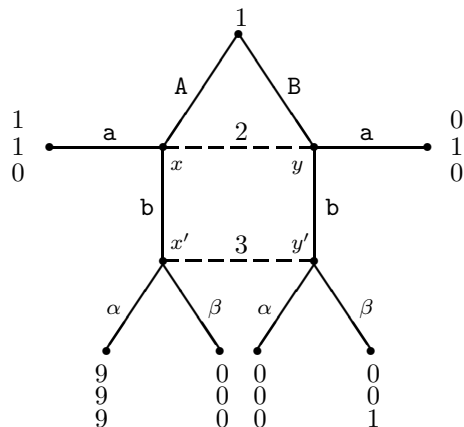
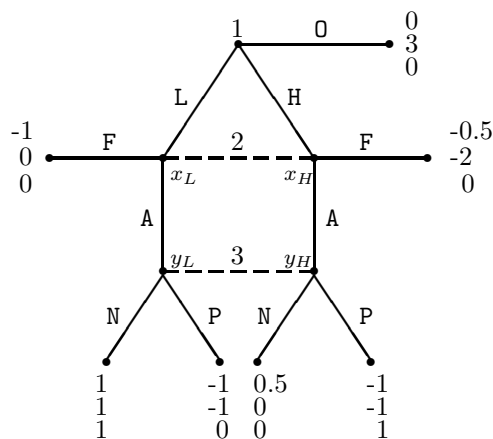


7 Sequential equilibrium

7.1. In the following game. Show that (A, b, α) with $\mu(x) = \mu(x') = 1$ is a perfect Bayesian and a sequential equilibrium. Show that (A, a, β) with $\mu(x) = 1$ and $\mu(x') \leq 1/10$ are perfect Bayesian equilibria but they are not sequential equilibria.

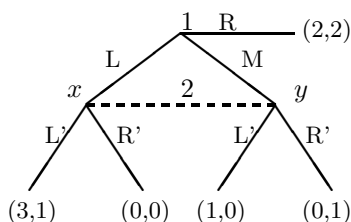


7.2. Consider a regulated monopolistic market threatened by the entrance of a potential new competing firm. In the first stage, the potential entrant (player 1) decides whether to enter the market and, if so, whether to enter with a low or a high investment. Suppose the latter is not allowed by regulation. In case of entry, the monopolistic firm (player 2) decides whether to start a price war or accommodate; the regulator (player 3) decides whether to penalize the market participants for behavior that does not conform to market regulation. Neither the monopolistic firm, nor the regulator observe the entrant's actual level of investment. The game and payoffs are illustrated below. The strategies of the entrant are denoted O (not enter), L (enter with low investment), and H (enter with high investment). The strategies of the monopolist are F (start a price war) and A (accommodate entry). The strategies of the regulator are N (do not penalize) and P (penalize).



- (a) Show that in a sequential equilibrium $\mu(x_L) = \mu(y_L)$.
- (b) Find all pure-strategy perfect Bayesian equilibria and check which ones are also sequential equilibria.

7.3. Consider again the game



- (a) Show that the strategy profile (L, L') with beliefs $\mu(x) = 1$ is a sequential equilibrium.
- (b) Show that the strategy profile (R, R') with beliefs $\mu(x) = 0$ is also a sequential equilibrium. Comment.