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Advanced Game Theory
Wintersemester 2016/2017
Problem Set I

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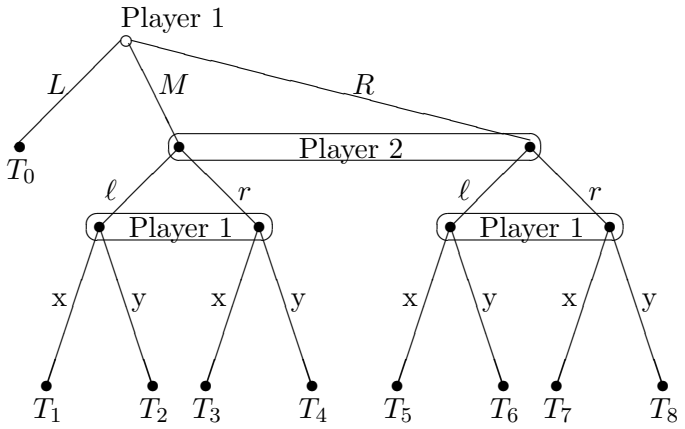
1.1 (cf. MAS-COLELL, p.233, 7.D.1)
In a game where player i has N information sets indexed $n = 1, \ldots, N$ and M_n possible actions at information set n, how many strategies does player i have?

1.2 (cf. MAS-COLELL, p.233, 7.E.1)
Consider the two-player game whose extensive form representation (excluding payoffs) is depicted below.



a) What are the possible strategies of player 1 and player 2?

b) Show that for any behavior strategy of player i, there is a mixed strategy for that player that yields exactly the same distribution over outcomes for any strategies, mixed or behavior, that might be played by i's rivals [this result is due to Kuhn (1953)].

c) Show that the converse is also true. For any mixed strategy that player 1 might play, there is a realization equivalent behavior strategy.

Enjoy!

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