

Exercises Set

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- Suppose, to begin with, there are two matches in one pile and a single match in the other pile. Let us write this configuration as $(2, 1)$. Winning is preferred to losing and, hence, the payoff number associated with winning must be higher than the one that corresponds to losing; suppose that these numbers are, respectively, 1, and -1 .

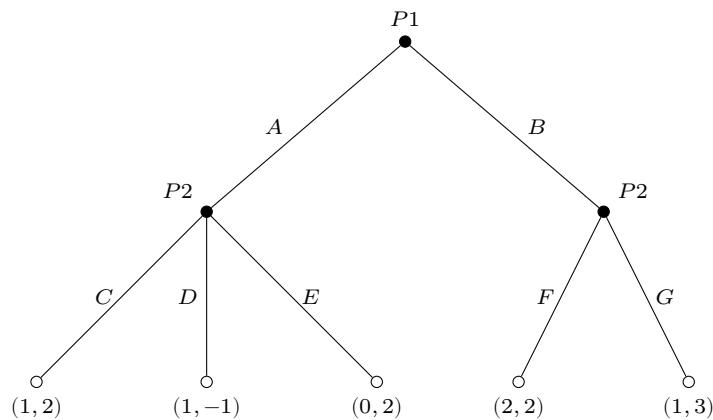
- What is the strategic representation of this game?

Solution:

1 - 2	(l, l)	(l, r)	(r, l)	(r, r)
u	$(1, -1)$	$(1, -1)$	$(1, -1)$	$(1, -1)$
m	$(-1, 1)$	$(-1, 1)$	$(-1, 1)$	$(-1, 1)$
d	$(1, -1)$	$(-1, 1)$	$(1, -1)$	$(-1, 1)$

- What is the extensive representation of this game?

Solution:



- (10 points) List all possible strategies for Players 1 and 2.

Solution:

The sets of strategies for players 1 and 2 respectively are $S_1 = \{(A), (B)\}$, and $S_2 = \{(C, F), (C, G), (D, F), (D, G), (E, F), (E, G)\}$.

- (b) (5 points) List two strategy profiles for this game.

Solution: It is a set of strategies for each game, (s_1, s_2) with $s_1 \in S_1$ and $s_2 \in S_2$.

- (c) (5 points) Find the Nash Equilibrium in pure strategies of this game.

Solution: The Nash Equilibria are $(A, (C, G))$, $(B, (C, G))$, and $(B, (E, G))$.

2. (15 points) Consider the following game tree: