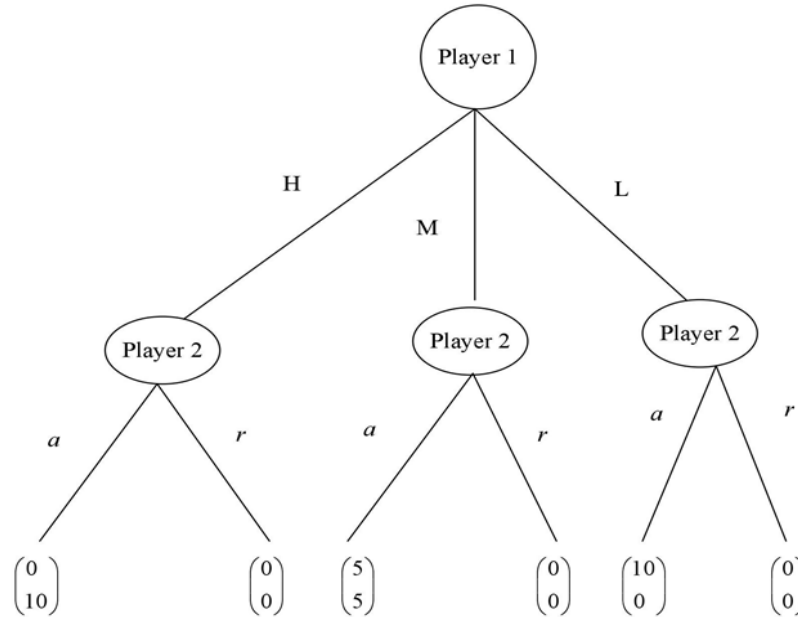


Homework # 5 [Due on Thursday April 14th, 2026]

- Find a story that can be represented by an extensive form game. Identify the: (i) set of players, (ii) set of actions, (iii) time structure of the game and (iv) payoffs.
- Consider the following extensive form game.



- What are the strategies for player 1?
 - What are the strategies for player 2?
 - Take your results from a) and b) and construct a matrix representing its normal form game representation.
- Consider the following normal form game

		Player 2	
		<i>L</i>	<i>R</i>
Player 1	<i>U</i>	-10, 10	0, 12
	<i>C</i>	-12, 0	2, 2
	<i>D</i>	-9, 0	1, 0

- Find strictly dominant strategies (if any) for player 1 and for player 2.
- Find strictly dominated strategies (if any) for player 1 and for player 2.
- If you apply iterative deletion of strictly dominated strategies (IDSDS), what is the surviving strategy pair (or pairs)? Explain the steps you use in IDSDS, and

why you use them.

4. Consider the following simultaneous-move game between the government (row player), which decides whether to offer unemployment benefits, and an unemployed worker (column player), who chooses whether to search for a job. As you interpret from the payoff matrix below, the unemployed worker only finds it optimal to search for a job when he receives no unemployment benefit; while the government only finds it optimal to help the worker when he searches for a job.

		Worker	
		<i>Search</i>	<i>Don't Search</i>
Government	<i>Benefit</i>	3, 2	-1, 3
	<i>No benefit</i>	-1, 1	0, 0

- (a) Represent this game in its extensive form (game tree), where the government acts first and the worker responds without observing whether the government offered unemployment benefits.
- (b) Does government has strictly dominant strategies? How about the worker?
- (c) Find which strategy profile (or profiles) survive the application of IDSDS.
5. Consider the following simultaneous-move game played by player 1 (in rows) and player 2 (in columns).

		<i>Player 2</i>		
		<i>x</i>	<i>y</i>	<i>z</i>
<i>Player 1</i>	<i>a</i>	2, 3	1, 4	3, 2
	<i>b</i>	5, 1	2, 3	1, 2
	<i>c</i>	3, 7	4, 6	5, 4
	<i>d</i>	4, 2	1, 3	6, 1

- (a) Which strategy pairs survive the application of iterative deletion of strictly dominated strategies (IDSDS)?
- (b) Using your results from part (a), show that there is no pure strategy Nash equilibrium (psNE) in this game.
- (c) Using your results from part (a), find a mixed strategy Nash equilibrium (msNE) in this game.