

Economics 414 – Midterm

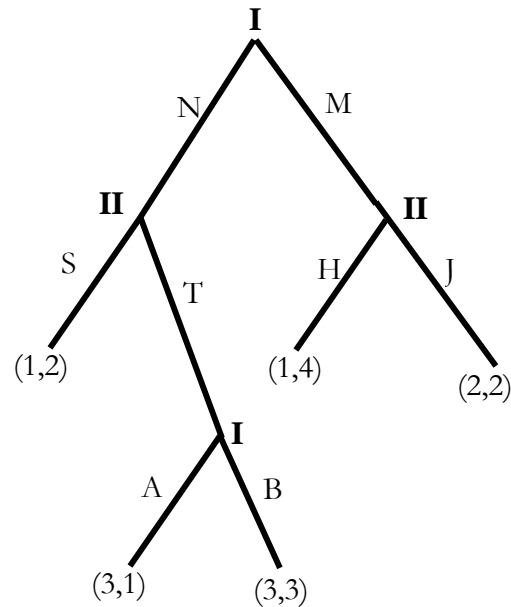
Please answer ALL questions on this examination. Be sure to explain any non-standard notation that you use. Justify your answers!

1. (40%) Consider the following simultaneous move game:

		Player 2		
		L	C	R
Player 1	T	(2, 1)	(2, 0)	(0, 0)
	M	(1, 0)	(1, -2)	(-2, 0)
	B	(0, 0)	(5, -1)	(1, 2)

- Define what is meant by a *strictly dominated strategy*.
- In the game above, which strategies survive Iterated Elimination of Strictly Dominated Strategies?
- Find all Nash Equilibria of the game above.
- Sketch the best response correspondences on a graph.

2. (30%) Consider the following extensive game with perfect information:



Payoffs are denoted (X,Y) where X is player I's payoff and Y is player II's payoff.

- a. Write down all possible strategies of each player.
 - b. Write down the game in strategic form (or normal form) and find all Pure Strategy Nash Equilibria.
 - c. Solve for the Subgame Perfect Nash Equilibrium of the extensive game.
3. (30%) Consider 2 oligopolists facing the (inverse) demand curve $P = 8 - Q$, where $Q = q_1 + q_2$. Assume that $C_1(q_1) = 2*q_1$ and $C_2(q_2) = 4*q_2$.
- a. Find the Nash equilibrium quantities of each firm if they competed Cournot-style.
 - b. Find the Subgame Perfect Nash Equilibrium quantities if the firms compete as Stackelberg competitors where firm 1 moves first.