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 Econ 812

HW #3 (please type all answers)

1. Solve the following game using strict dominance:

		Player 2		
		Attack	Defend	Retreat
Player 1	Attack	1,2	0,5	2,1
	Defend	2,0	6,3	3,2
	Retreat	3,4	1,5	4,3

2. Diagram the following game in extensive form, then solve it using backwards induction.

- Player 1 chooses left, center, or right.
- Player 2 chooses up, down, or middle.
- Player 1 chooses red, green, or blue.

Payoffs are as follows:

LUR	2,3	CUR	9,1	RUR	1,1
LUG	1,7	CUG	8,6	RUG	2,2
LUB	5,4	CUB	4,5	RUB	3,3
LDR	3,9	CDR	0,2	RDR	4,4
LDG	9,1	CDG	7,8	RDG	5,5
LDB	8,6	CDB	5,4	RDB	6,6
LMR	4,5	CMR	3,9	RMR	7,7
LMG	0,2	CMG	2,3	RMG	8,8
LMB	7,8	CMB	1,7	RMB	9,9

3. Find the PSNE.

		Player 2	
		Left	Right
Player 1	Up	9,9	9,9
	Down	0,0	10,9

4. Find the MSNE for problem 3.

5. Re-diagram the extensive form of Entry game if the Incumbent moves first instead of the Entrant. Does the subgame perfect equilibrium change? Explain.

6. Re-diagram the extensive form of the Coordination game if Player 1 moves first. Does the set of equilibria (pure strategy and mixed strategy) change? Why or why not?
7. Explain a simple, original, real-world strategic situation of your choice. Draw its extensive form and normal form. What are the pure and mixed strategy Nash equilibria? (half page)
8. Use game theory to analyze strategy in a sporting event of your choice. Pay particular attention to mixed strategy equilibria. (half page)