

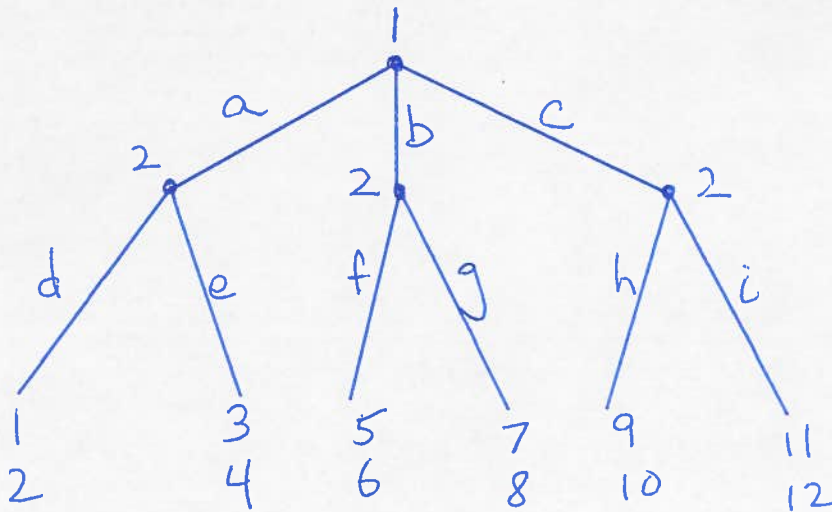
Your Name: _____

The Ohio State University
Department of Economics
First Midterm Examination

Econ 5001
Fall 2015
Prof. James Peck

Directions: Answer all questions, show all work, and label all figures.

1. (20 points) Convert the following extensive form game into normal form, by drawing the payoff matrix, labeling the strategies corresponding to the rows and columns, and filling in the payoffs.



2. (25 points) Consider the following game.

		player 2				
		U	V	W	X	Y
player 1	A	3,9	1,8	0,3	5,6	2,3
	B	0,1	6,3	5,4	4,3	7,2
	C	6,8	5,7	2,4	1,1	0,4
	D	1,5	6,1	3,2	7,6	2,6
	E	7,4	8,3	4,1	4,0	3,3

(a) (15 points) Find all of the (pure strategy) Nash equilibria of this game, and indicate your answer here:

(b) (10 points) Find all of the efficient strategy profiles, and indicate your answer here:

3. (25 points) Consider the following game.

		player 2		
		L	C	R
player 1	U	8,2	0,0	7,0
	M	3,0	5,1	6,1
	D	4,2	3,2	6,10

Is player 1's strategy, D, dominated? If yes, then name a strategy that dominates D. If no, then name a belief to which D is a best response.

4. (30 points) Consider the following strategic situation, in which ten firms simultaneously decide whether to enter a market (strategy E) or not enter the market (strategy N). Any firm that does not enter the market receives a payoff of 0, no matter what the other firms do. If firm i enters the market, its payoff depends on how many firms enter. Letting m denote the number of firms that enter the market, firm i 's payoff from entering is denoted by $u_i(E, m)$, given by

$$u_i(E, m) = 11 - m \quad \text{for } i = 1, 2, 3, 4$$

$$u_i(E, m) = 11 - 3m \quad \text{for } i = 5, 6, 7, 8$$

$$u_i(E, m) = 11 - 2m \quad \text{for } i = 9, 10.$$

(a) (15 points) Specify the rationalizable strategies for each player, and briefly explain your reasoning.

(b) (15 points) Find all of the (pure strategy) Nash equilibria of this game, and briefly explain your reasoning.