Advanced Micro 2007

Problem Set 2

Problem 1.
Find the IEDS solution to the following game. Describe all steps of the elimination procedure.

	Player 2						
Player 1		F	G	H	I	J	K
	A	4, 5	4, 2	2, 5	4, 6	5 ,2	2, 6
	B	6, 7	4, 9	0, 4	0, 7	4, 8	3, 8
	C	5, 10	5, 9	2, 5	7, 1	4, 2	7, 10
	D	6, 8	6, 10	9, 11	2, 8	6, 5	8, 5
	E	2, 1	0, 2	3, 2	2, 1	5, 7	30, 0

Problem 2.
Consider the Bertrand duopoly game with continuous strategies presented during the lecture:
- marginal costs are $c < 1/4$
- (inverse) demand curve: $P = 1 - Q$
- $S_1 = S_2 = [0, +\infty)$

Is this game solvable by IEDS?

Problem 3.
Consider the Cournot duopoly game, with the marginal costs, demand curve and strategy sets same as in the above Bertrand game. The difference is that firms choose quantities (q_1 and q_2) and there is only one price (same for both firms), which is determined by the demand function ($Q = q_1 + q_2$).
Find the best-response correspondences for the 2 firms. What is the NE? How does it compare to the NE in the Bertrand model?

Problem 4.↑
Consider the following game:

		Player 2	
		L	R
Player 1	U	3, 1	0, 0
	M	0, 0	3, 1
	D	2, 1	2, 1

Is this game solvable by IEDS?
Find all NE of this game (including mixed-strategy NE).

Problem 5.↑
Read Example 18.6 on page 18 and do Excercise 19.1 on page 19 of Osborne-Rubinstein (1994).

Problem 6.↑↑
Consider the Cournot model as in Problem 3. Is this game solvable by IEDS?