**HW Assignment – Advanced Microeconomics**

1. Consider the following normal-form game:

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| Player 1 |  | Player 2 | | |
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1. Find the pure strategy Nash equilibria.
2. Assume that the players use mixed strategies. If is the probability that Player 1 plays and is the probability that Player 2 plays , what is the expected payoff of each player?
3. If denotes the expected payoff of player , find the values of and that would satisfy
4. The answer to the part (b) above is called interior solution. But there can be also boundary solutions. To find the boundary solutions find the values of and that would satisfy:
5. Discuss the differences and similarities between pure and mixed-strategy Nash equilibria.
6. Suppose that the demand for a particular commodity is given by the market demand function:

where is total demand is the price. Assume that there are two producers in the economy:

where is the output level of producer . If the marginal cost of each producer is a constant , then the profit of player (i.e., firm) is given by:

1. Find the Nash equilibrium of this game.
2. Generalize this game to an player game and solve the Nash equilibrium.