Midterm Exam: Economics 101

You have one hour and fifteen minutes. Do all 3 questions; each have equal weight. Use two bluebooks. Put the answers to questions 1 and 2 in one bluebook, and the answer to question 3 in the other. Good luck.

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1. Short Answers

For each of the normal form games below, find all of the Nash equilibria. Which are Pareto Efficient?

a)

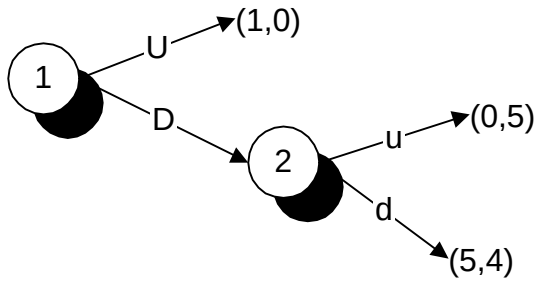
	L	R
U	6,3	7,1
D	1,2	8,3

b)

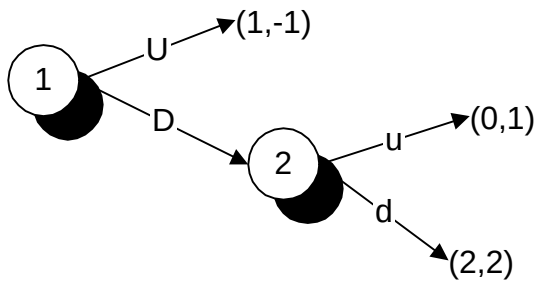
	L	R
U	3,3	2,7
D	7,2	1,1

For each of the extensive form games below, find the normal form and all Nash equilibria. Then find all of the subgame perfect equilibria. Which are Pareto Efficient?

c)



d)



2. Duopoly

Peach and Macrosoft are at it again. This time, industry demand for their identical product is $p = 6 - x$ where x is industry output. Macrosoft faces a marginal cost of 4, while Peach has a lower marginal cost of 2.

a) Find the competitive equilibrium industry output.

b) What is the monopoly solution if Macrosoft has a monopoly? If Peach has a monopoly?

c) Find the Cournot equilibrium of the market.

d) What is the Bertrand equilibrium?

e) Find the Stackelberg equilibrium in which Macrosoft is the leader.

3. How to bid?

Herbert H. Hacker and Robert R. Robot take part in an auction for a computer chip worth \$3 to Hacker and \$7 to Robot. However, Hacker doesn't especially like Robot, and will suffer a loss of \$3 if Robot gets the chip. Each may bid either \$2, \$4 or \$6. If there is a tie, Robot will get the chip. The auction is a first price, sealed bid auction (high bid wins, and pays the amount bid).

a) Find normal form of this game. Find all Nash equilibria of this game.

b) Which of the Nash equilibria are Pareto Efficient and which are not?

c) Apply the theory of iterated weak dominance to this game.