ECON 121: Problem Set #10

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Dr. Jasmine N Fuller

Alejandro Ouslan

Problem 1

Chicken is a classic game regarding brinksmanship; one version is portrayed in the movie Rebel Without a Cause, where two teenagers drive directly at one another in metal cars, waiting for the other to chicken out and swerve. Consider a game where two young rebels/world leaders are hurtling towards each other. The two can be Chicken (C) or Macho (M). If both are chicken, we reach the status quo. If one is Macho and the other is Chicken, the Macho one "wins" and the Chicken "loses." If both go Macho, a catastrophe occurs. The game can be described in matrix form as follows:

IP_1/P_2	d	d
Chicken	(0, 0)	(-1, 1)
Macho	(1, -1)	(-100000, -1000000)

(a) Are there any dominated stategies? If so, which ones?

(b) Find any pure stategy NE.

(c) Find the MSNE. What is the expected payoff for Player 1?

Problem 2

Consider the Cournot Fuopoly we studied in Chapter 4, but firm 2 has a marginal cost of 10 while firm 1 has a marginal cost of 0. As a reminder, demand is $p(q) = 100 - 1$; $q = q_1 + q_2$

(a) Generte the best response function of firms 1 and 2.

(b) Roughly graph the best responcse correspondence.

(c) Explain the first iteration you would take if you were using IESDS. (just provide one correct answer.)

(d) Find the Nash Equilibrium.