Bachelor of Economics
THAMMASAT UNIVERSITY

Semester: 1/2011

EE 311 Microeconomic Theory

Exercise 10: Oligopoly: Game Theory

1. Two major networks are competing for viewer rating. Each has two shows to fill prime time and is juggling its lineup. Each can choose to put its "bigger" show first or to place it second. The combination of decisions leads to the following "rating points" results:

		Network 2	
		First	Second
Network 1	First	17, 17	23, 20
	Second	4, 23	16, 16

   a) Find the Nash equilibrium for this game, assuming that both networks make their decisions at the same time.
   b) If each network is risk averse and uses a maximin strategy, what will be the resulting equilibrium?
   c) What will be the equilibrium if Network 1 can make its selection first? Write the game in extensive form.

2. Suppose that the cement market has the following demand: $P = 24 - 2Q$
   There are two firms whose marginal costs are: $MC_1 = 2$ and $MC_2 = 4$

   a) Find the quantity that will be produced by each firm, the price that will be set, and the profit of each firm under the following behavioral conditions:
      (i) Cournot behavior
      (ii) Stackelberg behavior with Firm 1 leading
      (iii) Stackelberg behavior with Firm 2 leading
      (iv) Both firms attempt to lead

   b) Use the profit figures from (a) to construct a pay-off matrix.
   c) Find the dominant strategy of each firm (if it exists) and find the Nash equilibrium (if it exists).