

ECON 267 Homework 3

Due in class on March 1, 2006

- Two firms operate in a single good market and produce quantities q_1 and q_2 respectively. They face the market demand curve $P = 100 - \frac{1}{2}Q$. They each have zero marginal costs. Find the following:
 - The Cournot solution.
 - The Bertrand solution.
 - The quantity leadership (Stackelberg model) solution where Firm 1 is the leader.
- We discussed different market equilibriums under different market structures. The following table summarizes the results that we got in class with the market demand as $P = 120 - 20Q$ and the cost structure for each firm as $AC = MC = 20$. Please fill in the blank column for the firm's profits. If there is more than one firm in the market, calculate the profits for each of them.

market	market output	market price	the firm's profits
perfect competition	5	\$20	
monopoly	2.5	\$70	
Cournot (duopoly)	10/3	\$160/3	
Bertrand (duopoly)	5	\$20	
Stackelberg (duopoly)	15/4	\$45	

3. Extra Credits Homework Problem

Suppose that 19 (identical) firms play Cournot oligopoly. The market demand curve is $P = 60 - Q$. They each have zero marginal costs. Find the market output and the market price.