

ECON 267 Homework 7

Problems 1 and 2 Due in class on April 19, 2006

1. There are 4 firms in a market and they are producing an identical product. The inverse demand for this product is $P = 100 - Q$, where P is the price and Q is aggregate output. The marginal cost for firm 1, 2, and 3 are \$20. The marginal cost for firm 4 is \$30. Note $Q = q_1 + q_2 + q_3 + q_4$. Assume that there is no fixed cost. Assume also that the firms each choose their outputs to maximize profits given that they each act as Cournot competitors.

- Identify the Cournot equilibrium output for each firm, the output price, and the profits of the four firms.
- Now assume that firms 1 and 4 merge. Is this merger profitable? What has happened to the profits of firm 2 as a result of this merger?

2. Norman International has a monopoly in the manufacture of whatsits. Each whatsit requires exactly one richet as an input and incurs other variable costs of \$5 per unit. Richets are made by RepRich Inc., which is also a monopoly. The variable costs of manufacturing richets are \$5 per unit. Assume that the inverse demand for whatsits is $p_w = 50 - q_w$, where p_w is the price of whatsits in dollars per unit and q_w is the quantity of whatsits offered for sale by Norman International.

- What is the equilibrium whatsit price to consumer p_w , the equilibrium Richet price to Norman International p_r , and the equilibrium quantity of whatsits q_w ? What is the profit earned by each firm at these equilibrium prices and quantity?
- Now assume that these two firms merge to form NPR international. What is the equilibrium whatsit price to consumer p_w , the equilibrium Richet price to Norman International p_r , and the equilibrium quantity of whatsits q_w ? What is the profit earned by each firm at these equilibrium prices and quantity?
- Compare the consumer surplus in Part (a) and Part (b). By how much has consumer surplus been increased by the merger in the market for whatsits.

3. Reading Assignment for April 26 Class. Read the following papers on “An introduction to Economics of Organization” topic and be prepared to answer questions in our last class (April 26). The papers are available through the links in the syllabus.

- Ronald Coase, “[The Nature of the Firm](#),” *Economica* (N.S.) 4: 386-405 (November 1937).
- Oliver E. Williamson, “[Markets and Hierarchies: Some Elementary Considerations](#),” *American Economic Review* 63 (2): 316-324 (1973)