

**Homework 8**  
**Econ 361**  
**Intermediate Microeconomic Analysis**  
**30 points**

1. **(6 points)** How are firms in a monopolistically competitive market like perfect competitors? How are they like monopolies? Explain conceptually, graphically, and in terms of the profit maximizing problem and equation that characterizes the optimum.

2. **(5 points)** Why aren't monopolistic competitors regulated like monopolies are?

3. **(8 points)**

Two firms are the sole producers in a market with demand given by:

$$P = 300 - 2Q, \text{ where } Q = Q_1 + Q_2.$$

Firm 1 has marginal cost given by  $MC_1 = 20 + Q_1$

Firm 2 has marginal cost given by  $MC_2 = 20 + Q_2$

a. Unable to recognize the potential for collusion, the two firms act as short-run perfect competitors. What are the equilibrium values of  $Q_1$ ,  $Q_2$ , and  $P$ ? What are each firm's profits?

b. Top management in both firms is replaced. Each new manager independently recognizes the oligopolistic nature of the industry and plays Cournot. What are the equilibrium values of  $Q_1$ ,  $Q_2$ , and  $P$ ? What are each firm's profits?

c. Suppose that the manager of Firm 2 guesses correctly that Firm 1 is playing Cournot, so Firm 2 plays Stackelberg. What are the equilibrium values of  $Q_1$ ,  $Q_2$ , and  $P$ ? What are each firm's profits?

d. If the managers of the two companies collude, what are the equilibrium values of  $Q_1$ ,  $Q_2$ , and  $P$ ? What are each firm's profits?

4. **(6 points)** Chapter 13, page 519, exercise 7.

5. **(5 points)** Are players more likely to collude in a game that is played a finite number of times than they are in a game that is played an infinite number of times? Explain.