

ECON2G03/2X03 —Section C03 Tutorial 11

December 2nd, 2015

1. The market structure of the local pizza industry is best characterized by monopolistic competition. One Guy's Pizza is one of the producers in the local market. The demand for One Guy's Pizza is:

$$Q^d = 225 - 10P \Leftrightarrow P = 22.5 - 0.1Q^d.$$

The resulting marginal revenue curve is

$$MR(Q^d) = 22.5 - 0.2Q^d.$$

One Guy's cost function is:

$$C(Q) = 0.15Q^2 \Rightarrow MC(Q) = 0.3Q.$$

Determine One Guy's profit maximizing level of output and the price charged to customers. Is this a long-run equilibrium?

2. Consider two identical firms (no. 1 and no. 2) that face a linear market demand curve. Each firm has a marginal cost of zero and the two firms together face demand:

$$P = 50 - 0.5Q, \text{ where } Q = Q_1 + Q_2.$$

- a. Find the Cournot equilibrium Q and P for each firm.
 - b. Find the equilibrium Q and P for each firm assuming that the firms collude and share the profit equally.
 - c. Contrast the efficiencies of the markets in (a) and (b) above.
3. Hale's One Stop and Auto Service competes with Murray's Gas Mart. The local demand is:
 $Q^d = 25 - 10P \Leftrightarrow P = 2.50 - 0.1Q^d$. Both firms sell exactly the same quality of gasoline. Thus, if the firms charge a different price, the lower price firm will capture the entire market share. If the firms charge the same price, they will split the market share. The marginal cost functions are both constant at \$1.25. If the firms compete by setting price, what is the market output level? What is the market price level?
4. Two firms at the St. Louis airport have franchises to carry passengers to and from hotels in downtown St. Louis. These two firms, Metro Limo and Urban Limo, operate nine passenger vans. These duopolists cannot compete with price, but they can compete through advertising. Their payoff matrix is below:

		United Limo	
		Increase Advertising	Don't Increase Advertising
Metro Limo	Increase Advertising	25, 15	30, 0
	Don't Increase Advertising	15, 20	40, 5

- a. Does each firm have a dominant strategy? If so, explain and what that strategy is.
- b. What is the Nash equilibrium? Explain where the Nash equilibrium occurs in the payoff matrix.