ECON 310
Assignment #4
Homework Quiz: Tuesday, November 4

1. Consider a competitive constant-cost industry in which each firm's total cost curve and marginal cost curves are given by the following equations:

$TC = 4q^2 + 100$
$MC = 8q$

Assume this industry is at its long-run equilibrium.

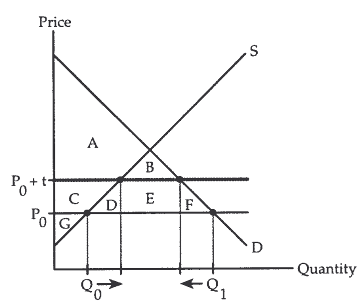
i. Determine the quantity supplied by each firm (q) in the long-run and the break even price.

ii. Suppose the market demand for the good produced is given by the formula p = 400 – 2Q. Determine the industry-wide quantity (Q).

iii. How many firms are in this industry?

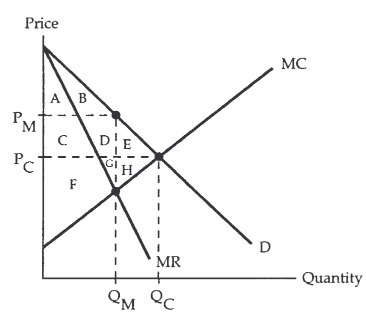
2. Consider the following:

The accompanying diagram shows the effects of a tariff. Initially, the price is P_0, domestic firms produce Q_0 units, and Q_1 - Q_0 units are imported from foreign firms. When the tariff is imposed, the price increases to P_0 + t.



How does the tariff affect consumers' surplus and producers' surplus? How much tariff revenue is collected by the government? Does imposing the tariff cause the country's social gain to rise or fall?

3. P_C and Q_C are the equilibrium price and quantity if the firm behaves competitively, and P_M and Q_M are the equilibrium price and quantity if the firm is a simple monopoly.



i. What area represents the producer's surplus earned in the monopoly equilibrium? _____

ii. Suppose this firm initially acted competitively. If the firm switched to the simple monopoly equilibrium, how much deadweight loss would be created? _____

iii. The difference between producer's surplus as a simple monopolist and producer's surplus if the price was set at the competitive equilibrium is: ______

iv. Suppose the firm could perfectly price discriminate. The difference between consumer surplus under a simple monopoly scenario and consumer’s surplus under the perfect price discriminating monopoly scenario is: __________

iv. Suppose the firm could sell some of its product in a different city for the competitive market price. Should the firm sell more or less that Qm in its local market? Label the new quantity Qn on the graph above.

4. Chapter 12, Problem Set #s 1-5.

5. Multiple Choice

i. A simple monopoly will maximize its profit by producing the quantity where
a. price and marginal cost are equal.
b. the demand curve crosses the average cost curve.
c. marginal cost reaches its minimum.
d. marginal revenue equals marginal cost.

ii. A natural monopoly exists when a firm
a. owns all of the world's known reserves of a natural resource.
b. has an average cost curve that is decreasing at the point where it crosses demand.
c. has obtained a patent on a new genetically modified organism.
d. is able to practice price discrimination in the sale of a natural resource.

iii. When first-degree price discrimination is perfectly implemented
a. social gain is maximized, with all gains going to the monopoly.
b. consumers' surplus and producer's surplus are both larger than in the case of simple monopoly.
c. the resulting deadweight loss is larger than if the monopoly did not price discriminate.
d. the consumers' and producer's gains from trade are identical to those in a competitive market.

iv. In order to practice *any form* of price discrimination, a monopoly must be able to
a. identify the maximum price that each customer is willing to pay.
b. separate its customers into distinct groups.
c. prevent resale of its product.
d. establish a legal barrier to entry.

v. Second-degree price discrimination generally takes the form of
a. special prices for students and seniors.
b. membership clubs.
c. quantity discounts.
d. “extras” like free delivery and free customer service.