

1. Computer chips are manufactured by Japanese firms and sold in the United States. *Japanese imports are currently subject to a \$60 per unit tariff.* A government official argues that the tariff is keeping prices too high and recommends a policy that would eliminate the \$60 tariff on imports.

Suppose that the supply of computer chips is characterized by an upward sloping supply curve and U.S. demand is characterized by a normal downward sloping demand curve. Suppose these curves are given by the following equations:

U.S. Demand equation:  $P = -2Q + 240$

Supply equation:  $P = 4Q + 60$

i. Calculate  $P_t$ ,  $Q_t$ ,  $P_{new}$  (w/o tariff) and  $Q_{new}$  (w/o tariff)

$P_t = \$180$   $Q_t = 30$   $P_{new} = \$160$   $Q_t = 40$

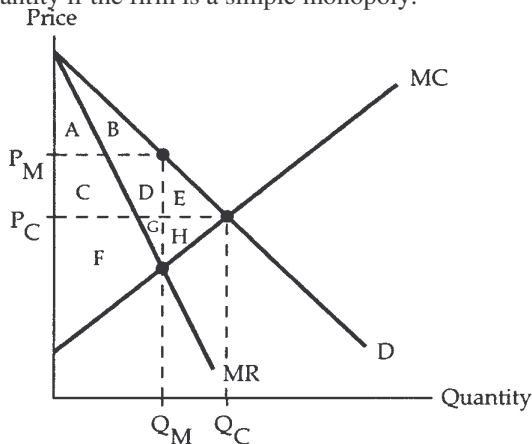
ii. Calculate consumer surplus before and after the removal of the tariff.

$CS \text{ before (w/tariff)} = \$900$  ;  $CS \text{ after (w/o tariff)} = \$1,600$

iii. According to the efficiency criterion (and assuming we care only about the welfare of Americans) should we reject or accept the policy recommendation? Why?

$CS \text{ w/tariff} + \text{tariff revenue } (\$1800) > CS \text{ w/o tariff}$ , so we should reject the policy.

2.  $P_C$  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 monopolist.



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

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

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:  $CDFG - FGH = CD - H$

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:  $AB - 0 = AB$

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 than  $Q_m$  in its local market? Label the new quantity  $Q_n$  on the graph above. *Less,  $Q_n$  should be where  $MR$  crosses  $P_c$ .*

3. Chapter 12, Problem Set # 1-5.

1. I. (Right, down)

- II. (Right, up), (left,down), (right, down)
  - III. (Right, Up)
  - IV. (Right, down)
  - V. None
  - VI. (Left, up), (right, down)
  - VII. (left, up), (right, down)
  - VIII. (left, up)
- 2.
- I. (Right, up), (left, down), (right, down)
  - II. (Right, up), (left,down), (right, down)
  - III. (Right, Up)
  - IV. (Right, up), (left, down),( right, down)
  - V. (right, down), (left, down)
  - VI. (right, down)
  - VII. (left, up), (right, down)
  - VIII. (left, down), (right down)
- 3.
- I. Yes, Yes
  - II. No, No
  - III. Yes, No
  - IV. Yes, Yes
  - V. No, No
  - VI. No, No
  - VII. No, No
  - VIII. Yes, No
- 4.
- I. (right, down)
  - II. (left, down)
  - III. (right, up)
  - IV. (right, down)
  - V. (right, down)
  - VI. (right, down)
  - VII. (right, down)
  - VIII. (right, down)
- 5.
- I. (right, down)
  - II. (right, up)
  - III. (right, up)
  - IV. (right, down)
  - V. (left, down)
  - VI. (right, down)
  - VII. (left, up)
  - VIII. (left, up)

#### 4. 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.

- vi. The initial holdings of an individual in an Edgeworth box is referred to as
- a. the contract point.
  - b. ***the endowment point.***
  - c. the Pareto preferred point.
  - d. the competitive equilibrium point.

- vii. In an Edgeworth box, a point where two indifference curves are tangent represents
- a. the initial endowment point.
  - b. an allocation that both consumers prefer to the initial endowment.
  - c. a competitive equilibrium.
  - d. ***a Pareto-optimal allocation of goods.***

- viii. Analysis of an Edgeworth box economy shows that a competitive equilibrium
- a. ***must be Pareto optimal.***
  - b. can be located anywhere along the contract curve.
  - c. may lie anywhere within the region of mutual advantage.
  - d. must lie to the southeast of the endowment point.