Unit 7. Firm behaviour and market structure: monopoly

Free response questions

1. APT 2003

2. (a) Draw a correctly labeled graph showing a typical monopoly that is maximizing profit and indicate each of the following.

   (i) Price

   (ii) Quantity of output

   (iii) Profit

   (b) Describe and explain the relationship between the monopolist's demand curve and marginal revenue curve.

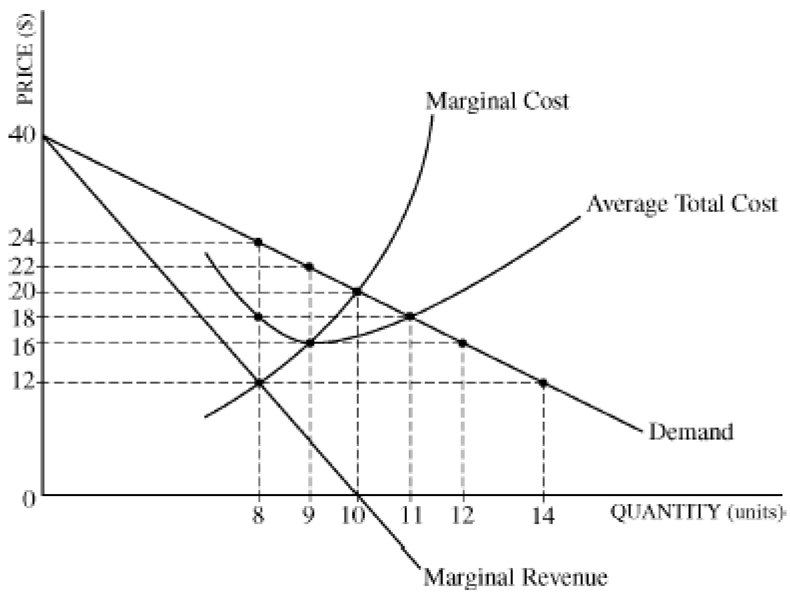
   (c) Label each of the following on your graph in part (a).

   (i) Consumer surplus

   (ii) Deadweight loss

2. APT 2011

1. A monopolist's demand, marginal revenue, and cost curves are shown in the diagram below.



(a) Assume that the monopolist wants to maximize profit. Using the labeling on the graph, indicate the monopolist's price.

(b) When the output is 8 units, what is the profit per unit?

(c) Assume that the monopolist is maximizing profit. Is allocative efficiency achieved? Explain.

(d) Between the prices of $16 and $18, is the monopolist in the elastic, inelastic, or unit elastic portion of its demand curve? Explain.

(e) Assume that regulators set an output of 11 units.

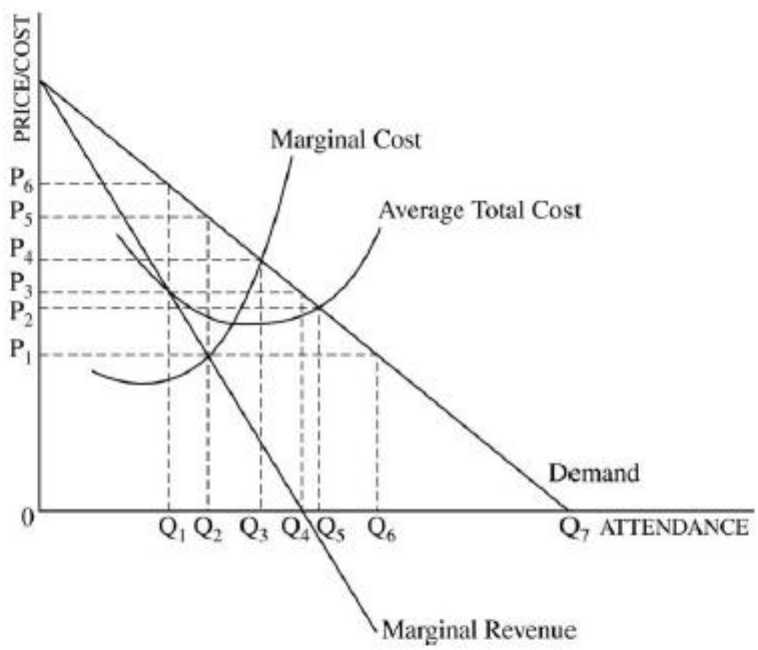
   (i) Is the monopolist earning positive economic profit? Explain.

   (ii) Is the monopolist earning positive accounting profit?

3. APT 2004 (Form B)

1. Due to a new technology, Brunelle Inc. enjoys monopoly power. Brunelle does not engage in price discrimination.
   (a) Explain why the demand curve lies above the marginal revenue curve for Brunelle.
   (b) Assume that Brunelle is earning short-run economic profits. Using a correctly labeled graph, show the following for Brunelle.
      (i) Profit-maximizing level of output, labeled as Q^*
      (ii) Profit-maximizing price, labeled as P^*
      (iii) Economic profits, as a shaded area
   (c) If Brunelle wants to maximize its total revenues instead of profits, using the graph from part (b) show the following.
      (i) Revenue-maximizing level of output, labeled as Q^r
      (ii) Revenue-maximizing price, labeled as P^r
   (d) Given your answer in part (b), indicate whether Brunelle is producing the allocatively efficient level of output. Explain.
   (e) Explain what will happen to Brunelle's demand curve as other firms adopt the same technology.

4. APT 2006



1. There is one art museum on the island of Watsonia. The museum's demand and cost curves are shown in the graph above. The museum currently relies on an admission charge for some of its funding. Its directors are debating about how to set the admission charge.
   (a) Using the labeling of the graph above, identify the price and quantity associated with the following objectives.
      (i) The museum maximizes its profit.
      (ii) The museum maximizes its total revenue.
      (iii) The museum maximizes the sum of consumer and producer surplus.
      (iv) The museum maximizes its attendance, as long as it breaks even.
   (b) When the attendance is Q_1, is the demand price elastic, inelastic, or unit elastic? Explain.

5. APT 2009

1. CableNow is the only supplier of cable TV services offering a wide range of TV channels. CableNow is an unregulated firm and is currently earning an economic profit. Assume that CableNow does not practice price discrimination.

   (a) Draw a correctly labeled graph for CableNow and show each of the following. Make sure your graph is large enough to be legible.

   (i) The profit-maximizing quantity of cable services, labeled as Q*

   (ii) The profit-maximizing price, labeled as P*

   (iii) The area of economic profit, completely shaded

   (iv) The socially optimal level of cable services, assuming no externalities, labeled as Q_S

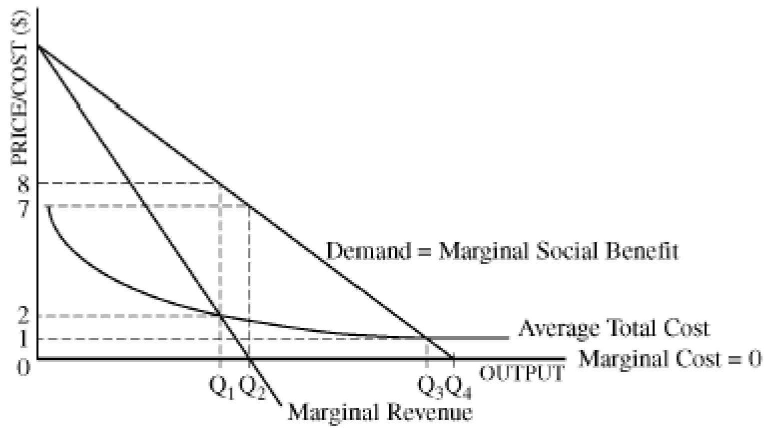
   (b) Assume that the government grants CableNow a lump-sum subsidy of $1 million. Will this policy change CableNow's profit-maximizing quantity of cable services? Explain.

   (c) Instead of granting a subsidy, assume now that the government chooses to require CableNow to produce the quantity at which CableNow earns zero economic profit. On the graph you drew in part (a), label this quantity Q_R.

   (d) At Q_R, is the firm's accounting profit positive, negative, or zero? Explain.

   (e) Assume that a new study reveals there are external benefits associated with watching TV. Will the socially optimal quantity of cable services now be larger than, smaller than, or equal to the Q_S you identified in part (a)(iv) ?

6. APT 2010 (Form B)



1. The diagram above shows the cost and revenue curves for a bridge to a popular island. The marginal cost of crossing the bridge is zero and is indicated in the diagram as the horizontal axis. The price is the toll to cross the bridge, and the output is the number of autos that cross the bridge each day.

   (a) Assume that a private firm owns the bridge and maximizes profits. Based on the diagram, determine each of the following.

   (i) Output

   (ii) Price

   (b) Now assume that a municipality owns the bridge and sets the price to achieve allocative efficiency. Based on the diagram, determine each of the following.

   (i) Output

   (ii) Price

   (c) At a price of $1, is the municipality's accounting profit positive, negative, or zero? Explain.

   (d) Suppose that the municipality sets a break-even price that generates revenues to just cover all economic costs.

   (i) Based on the diagram, determine the break-even output.

   (ii) At the output you determined in part (d)(i), is the demand relatively elastic, relatively inelastic, unit elastic, perfectly elastic, or perfectly inelastic?

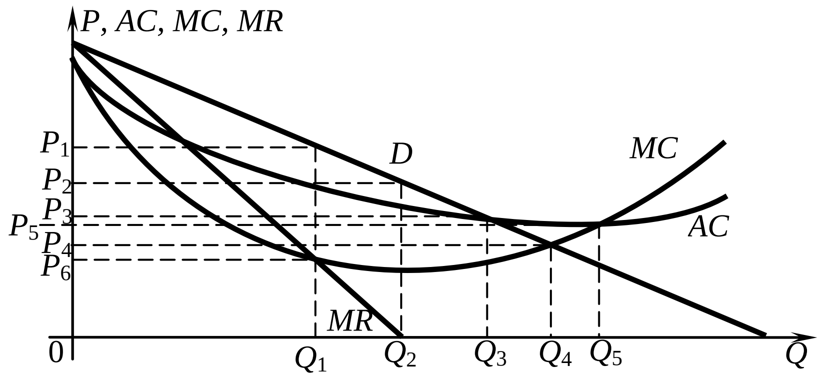
(e) If a company begins to provide access to the island via commercial watercraft, what will happen to each of the following in the diagram?

(i) The demand curve for bridge crossings

(ii) The profit-maximizing output

(f) Suppose the long-run average total cost is strictly downward sloping. Would it be efficient to build a second bridge? Explain.

7.



(a) Define the market structure presented on the graph. Explain Your answer.
(b) If the firm is not a subject to government regulation what will be the profit maximizing output and price. Explain Your answer.
(c) What output and price corresponds to maximum of total revenue of the firm. Why?
(d) Assume that the government sets price for the product of the firm equal to average cost. What level of price and output will correspond to this system of regulation? Explain Your answer.
(e) Assume that the government sets price for the product of the firm equal to marginal cost. What level of price and output will correspond to this system of regulation? Explain Your answer.
(f) Assume that the graph presents cost curves of a perfect competitor. What will be the price and output in the long run equilibrium of the firm?