B.E. International Program

Faculty of Economics, Thammasat University

EE 211 Principle of Microeconomics

Exercise 8

(Market Structure)

1. Consider total cost and total revenue from the following table.

Q	0	1	2	3	4	5	6	7
TC	8	9	10	11	13	19	27	37
TR	0	8	16	24	32	40	48	56

   a. Calculate the profit for each output level, and find the profit-maximizing quantity.
   b. Calculate marginal revenue (MR) and marginal cost (MC) for each output level. At which output level is MR equal to MC? How does this answer relate to the answer in (a)?
   c. Can you tell whether this firm is in perfectly competitive market?

2. Considering the following information regarding output levels, costs, and market price for two perfectly competitive firms operating in different industries. Each firm has an upward-sloping marginal cost curve.

   Firm A: output = 5,000, price = $1.00
   TVC = $2,500, TFC = $2,000, MC= $1.2

   Firm B: output =5,000, price = $1.20
   Minimum ATC = $1.00

   a. Are these firms making profits?
   b. If so, how much?
   c. Are these firms making maximum profits?
   d. Should these firms produce more, less, or the same output? Explain.

3. This exercise traces some of the long-run adjustments that take place in a perfectly competitive market in response to a change in demand (we ignore adjustments that current firms may make to plant size). Assume that each firm –currently in the industry as well as potential entrants – has the cost structure depicted in panel (i) below. Panel (ii) show the industry's short-run supply curve S and the current market demand curve D.

Figure (i) Typical Firm

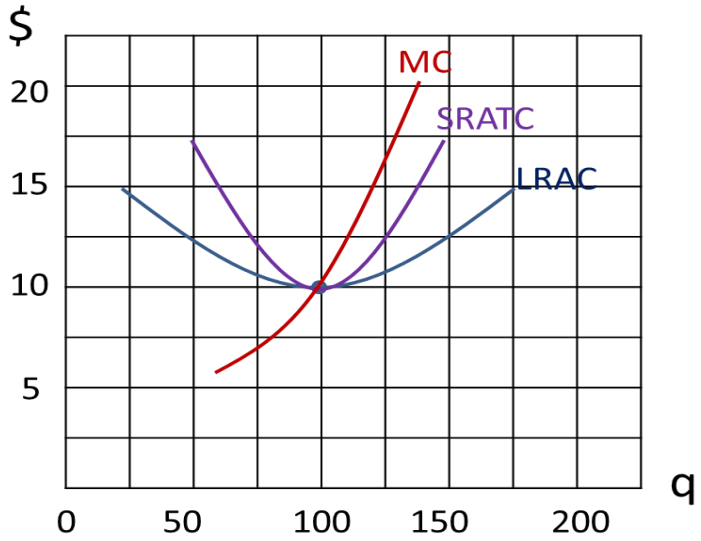
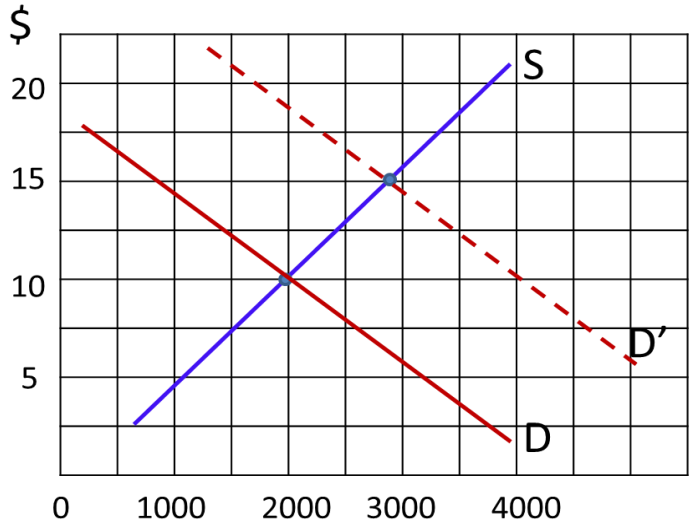


Figure (ii) Market



a. What are equilibrium price and quantity in this market?

b. What is the output of each firm in this industry, and what is the resulting level of profit?

c. How many firms are operating in this industry?

d. Is the industry in the long-run equilibrium? Explain.
e. Now suppose that the demand for this good shifts to D'. What are the new equilibrium market price and quantity in the short run?
f. What is the short-run quantity response of each firm in the industry?
g. What is each firm's short-run profit?
h. Explain what will happen to the industry short-run supply curve once sufficient time has elapsed for entry and exit to occur?
i. Once the new equilibrium is established, what are the market price and quantity?
j. What are the level of output and associated profit of each firm in the new long-run equilibrium?
k. How many firms will be active in this industry?

4. The following data relate to a monopolist and its product.
   a. Calculate marginal cost (MC), marginal revenue (MR), total revenue (TR), and profit to complete the table.

Output	TC	Price	Quantity Demanded	TR	MR	MC	Profit
0	$20	$20	0				
1	24	18	1				
2	27	16	2				
3	33	14	3				
4	43	12	4				
5	57	10	5				
6	75	8	6				

   b. Draw the AR, MR, and MC curves.
   c. What is the profit-maximizing output (whole units)?
   d. At what price will the monopolist sell the product (whole units)?
   e. What are the monopolist's economic profits?

5. The following graph shows the cost and revenue curves for a monopolist.

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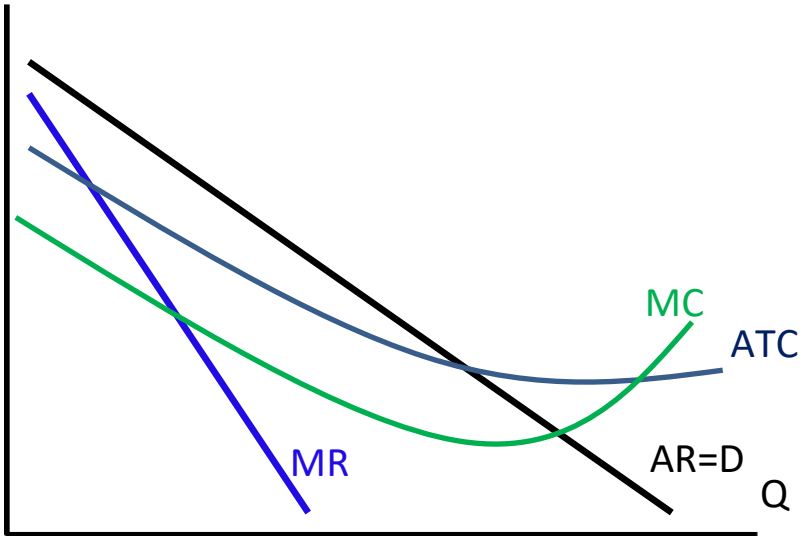
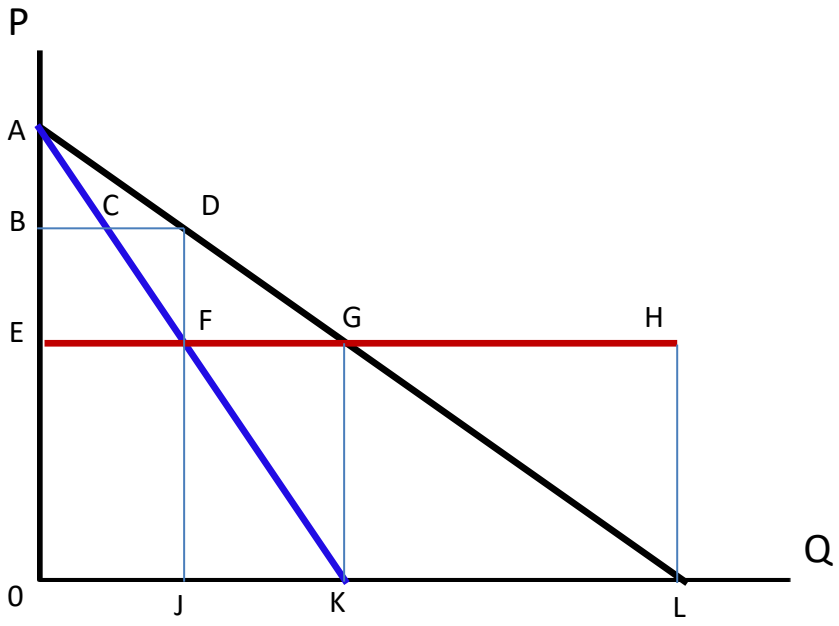


a. Illustrate on the graph the price the profit-maximizing monopolist will set and the quantity that will be sold (label the Pm and Qm).
b. Indicate monopoly profits by shading in the appropriate area.
c. Suppose that the monopolist, to be allocatively efficient, sets price equal to marginal cost. Label the price Pe and the output Qe. Would this output be sustainable in the long run? Explain.

6. The following graph applies to a monopoly. AL is the market demand curve and AK is the marginal revenue curve. EH is the long-run supply curve for the industry as well as the LRAC curve for the monopolist. (There are no economies of scale so that LRAC = LRMC).



a. Assume that the monopolist sets a price that maximizes the profits. Predict the following:
   i. The monopoly price ____ and output ____.
   ii. Consumer surplus at that price _____.
   iii. Economic profit at that price ____.

b. Suppose that the monopolist is regulated so that the price is set equal to LRMC. Predict the following:
   i. The monopoly price ____ and output ____.
   ii. Consumer surplus at that price _____.
   iii. Economic profit at that price ____.