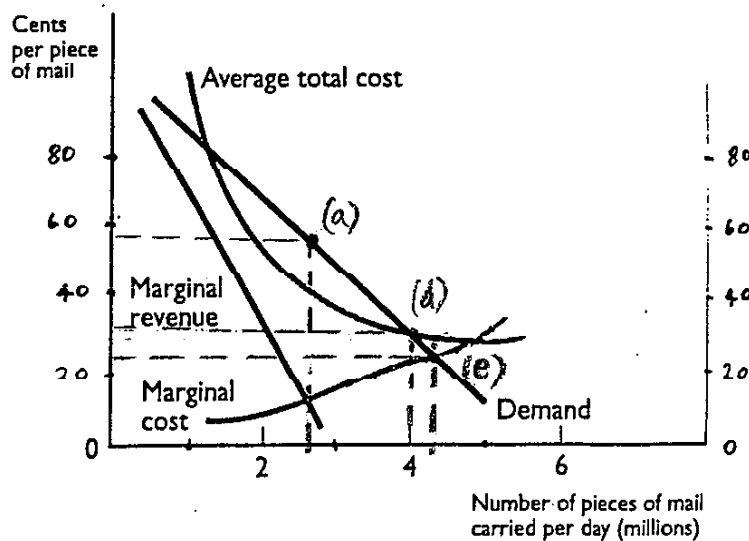


### Problems

1. A monopolistic competitor in long-run equilibrium will never produce at the minimum point of its Average Cost function.  
Is this true? Discuss.
2. A profit-maximising monopoly will always produce an output lower than that which would maximise its sales revenue.  
(True/False, explain.)
3. If a monopoly is able to practise perfect price discrimination, then its output will be higher than if it must adopt a conventional uniform pricing system.  
(True/False, explain.)
4. The price of petrol has risen from 14¢ per litre in 1978 to 70¢ per litre in 1997, while the Consumer Price Index has risen from 60.5 to 162.8 over this period (1984/85 = 100.0).  
The real price of petrol has risen.  
Is this true? Discuss.
5. Many retail video stores offer two alternative plans for renting films:
  - A. A two-part tariff: Pay an annual membership fee (e.g., \$40), and then pay a small fee for the daily rental of each film (e.g., \$2 per film per day).
  - B. A straight rental fee: Pay no membership fee, but pay a higher daily rental fee (e.g., \$4 per film per day).

What is the logic behind the two-part tariff in this case? Why offer the customer a choice of two plans, rather than simply a two-part tariff?

6. Postal service, which for 150 years has been largely a government monopoly in Australia, has been the subject of controversy. Suppose that the short-run demand and cost curves of the Sydney post office are as shown below:



- a. What quantity and price would the profit-maximising Sydney post office choose to operate at? Explain.
  - b. Does the post office appear to be a natural monopoly, as some claim? Explain.
  - c. If the post office is a natural monopoly, must it *necessarily* be operated under government ownership? Explain.
  - d. If the Sydney post office wants to carry as many articles of mail as it can without incurring a short-term deficit, how many should it carry per day? At what price? Explain.
  - e. What is the socially efficient level of operation and price? Would the post office be happy operating at this level? Explain.
7. John Dorman, the CEO of JDE Inc., hires you to help him figure out what to do with his barrels. From a careful study of the company, you have come up with the following information (Quantity of output):

Output Quantity (in '00s)	Demand	Average Variable Cost	Total Revenue	Total Variable Cost	Profit	Marginal Cost	Marginal Revenue
0	\$16	na	0	0	0	0	—
1	\$15	\$1	1500	100	1400	100	\$1,500
2	\$14	\$2	2800	400	2400	300	1300
3	\$13	\$3	3900	900	3000	300	1100
4	\$12	\$4	4800	1600	3200	700	900
5	\$11	\$5	5500	2500	3000	900	700
6	\$10	\$6	6000	3600	2400	1100	500
7	\$9	\$7	6300	4900	1400	1300	300

- a. Is this firm a price-taker or does it have some market power? Explain.
- b. Complete the table. Round your answers to the nearest dollar. Hint: when calculating marginal revenue and marginal cost you are to find the addition to *total revenue* and *total cost* that the firm experiences when it produces and sells an additional *unit* of output as measured in the quantity column. Here an output quantity "unit" is 100. Thus, the marginal revenue at 100 is \$1,500 (total revenue at 1 unit) – \$0 (total revenue at 0 units) = \$1,500.
- c. On a 2-dimensional graph, plot the total revenue and total cost curves against quantity of output.
- d. On the same graph, plot JDE's total profits at each level of output.
- e. Check back over your table and your graphs and use the necessary condition of profit maximisation to recommend an output level for JDE.
- f. Should the firm shut down, or should it follow the advice you gave in your answer to part e? Justify your answer.