

AP Microeconomics
Unit 3+4 Practice FRQs

FRQ #1

Assume that pencils are manufactured in a perfectly competitive market that is in long-run equilibrium.

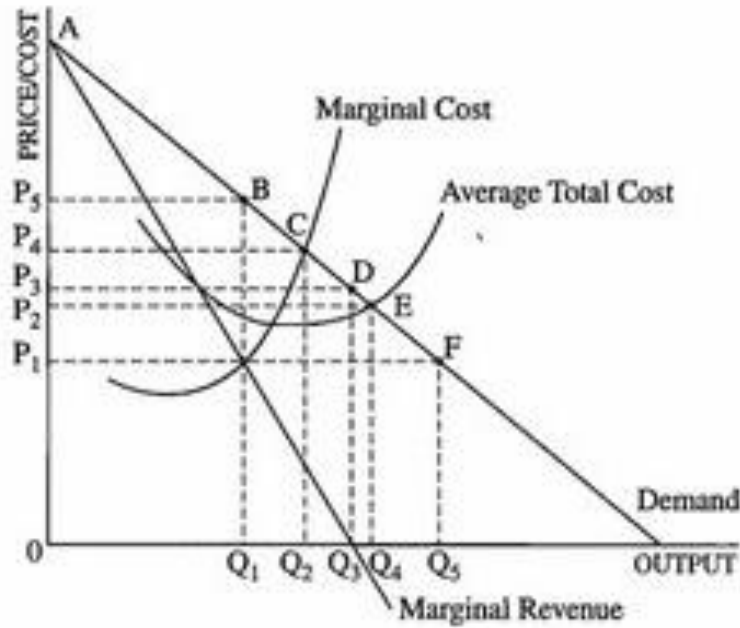
- (a) Draw correctly labeled side-by-side graphs for the pencil market and for a representative firm and show each of the following.
- i. The market price and quantity, labeled P_M and Q_M , respectively
 - ii. The firm's profit-maximizing price and quantity, labeled P_F and Q_F , respectively
- (b) What is the relationship between P_M and P_F ? Explain.
- (c) Rent on the factory building is an important fixed cost in the production of pencils, and the industry experiences significant increases in rent.
- i. What will happen to the firm's profit-maximizing quantity in the short run? Explain.
 - ii. On your graph in part (a), show the impact of the rent increase and completely shade the area representing the firm's profit or loss in the short run.
- (d) As a result of the rent increase, what will happen to each of the following in the long run?
- i. The number of firms in the market. Explain.
 - ii. The market equilibrium quantity relative to Q_M and the market equilibrium price relative to P_M . Explain.

FRQ #2

Rice is produced in a perfectly competitive industry. Grand Farm is a typical firm in the rice industry earning a positive economic profit.

- (a) Using correctly labeled side-by-side graphs for the rice industry and Grand Farm, show each of the following in the short run.
- i. The industry price and quantity, labeled P_M and Q_M
 - ii. Grand Farm's demand curve and marginal revenue curve, labeled D_F and MR_F
 - iii. Grand Farm's quantity of output, labeled Q_F
 - iv. Grand Farm's profit, shaded completely
- (b) In the long run, what happens to each of the following?
- i. The number of firms in the industry. Explain.
 - ii. Equilibrium price; does it increase, decrease, or remain the same relative to P_M ?
- (c) Suppose Lori's Quick Eats sells fried rice in a monopolistically competitive fast-food industry. Lori's Quick Eats is earning positive economic profits in the short run. Using a correctly labeled graph for this monopolistically competitive firm, show each of the following in the short run.
- i. The demand and marginal revenue curves, labeled D_L and MR_L
 - ii. The marginal cost and average total cost curves, labeled MC and ATC
 - iii. The profit-maximizing price and quantity, labeled P_L and Q_L
- (d) Draw a correctly labeled graph for Lori's Quick Eats in long-run equilibrium showing the demand curve and the long-run average total cost curve.

FRQ #3



The diagram above shows the cost and revenue curves for a monopoly.

- (a) How does a monopolist determine its profit-maximizing level of output and price?
- (b) Using the information in the graph, identify each of the following for the monopolist.
 - i. The profit-maximizing level of output and price
 - ii. The line segment of the demand curve that is elastic
- (c) Suppose that the industry depicted in the graph became perfectly competitive without changing the demand or cost curves. Identify the equilibrium price and output that would prevail in the perfectly competitive market.
- (d) Using the information in the graph, identify the area of consumer surplus for each of the following.
 - i. The profit-maximizing monopoly
 - ii. The perfectly competitive industry
- (e) Define allocative efficiency.
- (f) To be allocatively efficient, what level of output should the monopolist produce?
- (g) Should the government use a per-unit tax or a per-unit subsidy to lead the monopolist to produce the allocatively efficient level of output? Explain how this tax or subsidy would achieve the allocatively efficient level of output.

FRQ #4

Electrifide Co. operates as a natural monopoly providing electricity for a particular region of the country. Electrify has a constant marginal cost of production.

- (a) Draw a correctly labeled graph for each of the following:
- The profit maximizing quantity labeled as Q_M
 - The profit maximizing price labeled as P_M
 - The allocatively efficient quantity labeled as Q_A
 - The deadweight loss, shaded completely
- (b) Suppose the government wants the monopolist to produce the socially optimal quantity of electricity. Would granting a per-unit subsidy or imposing a per-unit tax on electricity lead the monopolist to produce closer to the socially optimal output?
- (c) Suppose instead of granting a subsidy or imposing a tax, the government is considering regulating the price the monopolist charges.
- If the government's goal is to have the monopolist earn a normal profit, indicate on your graph from part (a) the price that the government would set as P_N and the resulting equilibrium as Q_N .
 - If instead the government wants to use price regulation to get the monopolist to produce the socially optimal level of output, what price would the government set?

FRQ #5

- (a) Draw a correctly labeled graph showing a typical monopolistically competitive firm, Firm Z, in long-run equilibrium, and show each of the following.
- The profit-maximizing price, labeled P
 - The profit-maximizing quantity, labeled Q
 - The allocatively and productively efficient levels of output, labeled Q_1 and Q_2 , respectively
- (b) Is Firm Z making positive accounting profit? Explain.
- (c) Suppose, over the long run, that the Gobble Company in a different industry continues to make significantly higher economic profit than Firm Z and most other firms in other industries. What must be true in order for the Gobble Company to make more economic profit than firms in other industries in the long run?
- (d) Suppose that Firm Y raises the price of its product which increases the demand for Firm Z's product. Is Firm Z's product a complement or substitute for Firm Y's product?
- (e) Assume Firm Z discovers a new way to display its product that takes customers away from its competitors.
- What effect would this have on Firm Z's economic profits in the short run? Explain.
 - Assume that, in time, competitors copy Firm Z's new display. What effect would this have on Firm Z's economic profits in the long run? Explain.