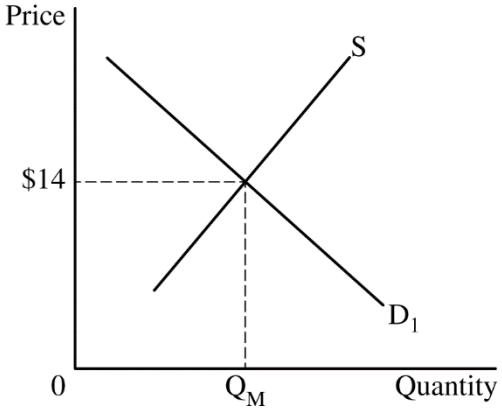
2024

AP® Microeconomics

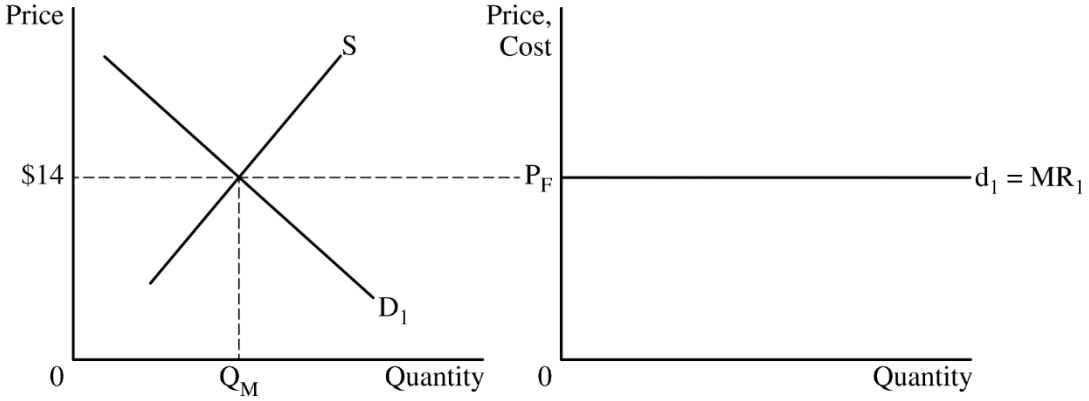
Scoring Guidelines
Set 1

Question 1: Long — 10 points

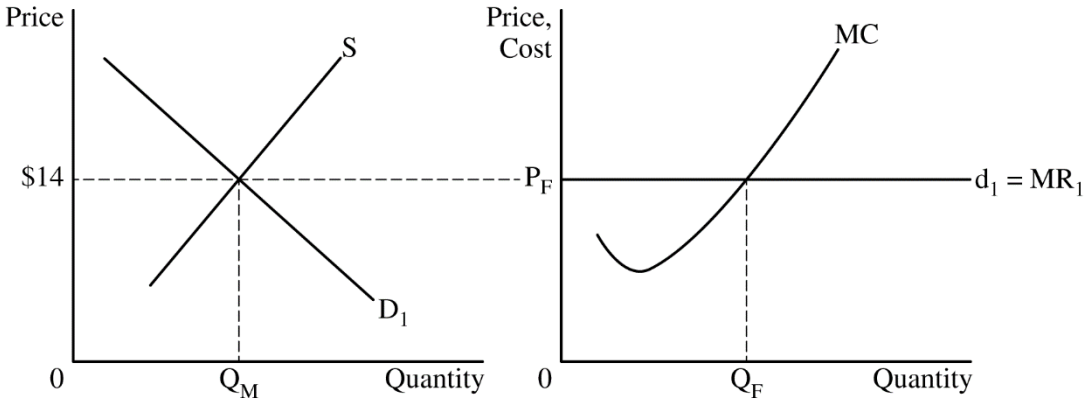
(a) Draw a correctly labeled graph of the market for soybeans with a downward-sloping demand (D_1) curve and an upward-sloping supply (S) curve and label the market equilibrium price as \$14 and the market equilibrium quantity as Q_M. **1 point**



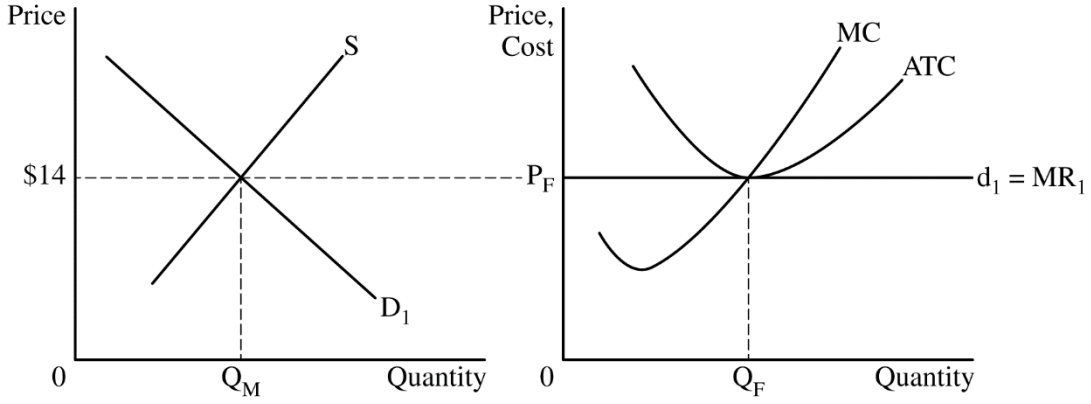
For the second point, draw a correctly labeled graph of Soja Farm and show the firm's horizontal demand and marginal revenue (d_1=MR_1) curve extended from the market equilibrium price and label the firm's price as P_F. **1 point**



For the third point, the firm's graph must show a rising marginal cost (MC) curve, and show the profit-maximizing quantity, labeled Q_F where MR = MC. **1 point**



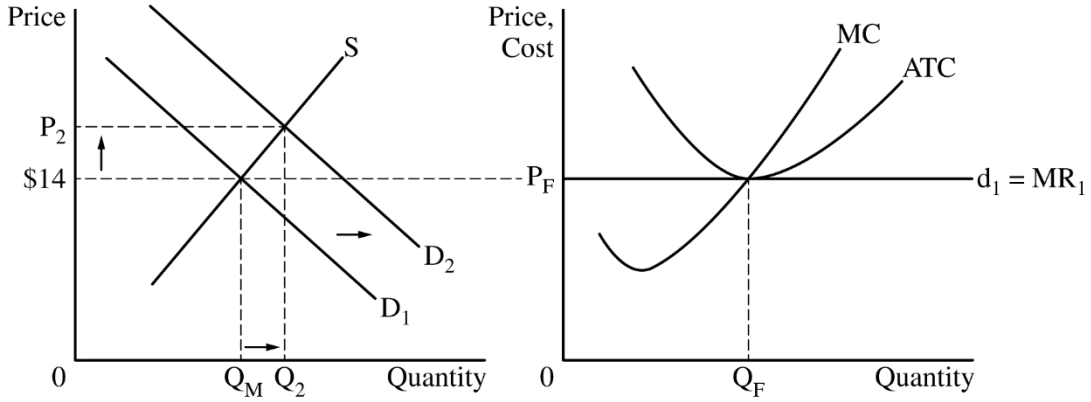
For the fourth point, the firm's graph must show the average total cost (ATC) curve tangent to the firm's demand curve at Q_F and show the MC curve passing through the minimum point of the ATC curve. **1 point**



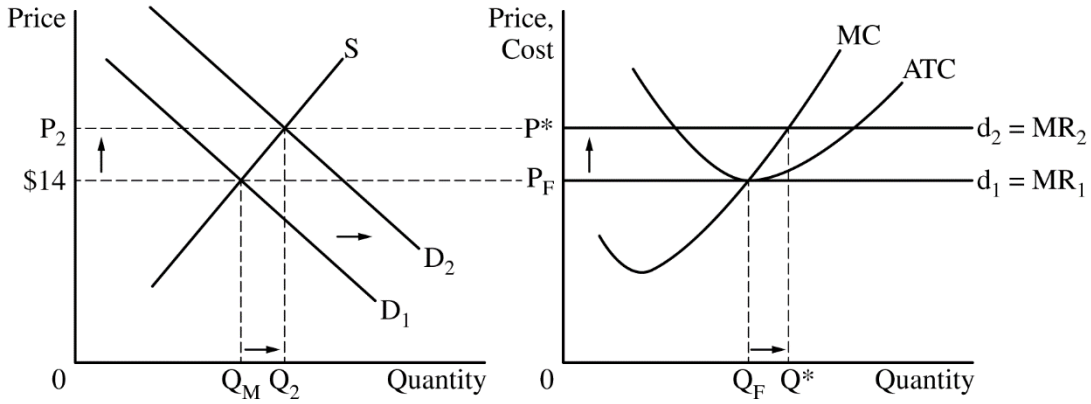
Total for part (a) **4 points**

(b) State that Soja Farm's total revenues would decrease to \$0 and explain that all consumers of soybeans would buy soybeans from other sellers who charge the market price of \$14. **1 point**

(c) (i) The market graph from part (a) must show a rightward shift of the market demand curve and the new equilibrium price labeled P_2 and the new equilibrium quantity labeled Q_2. **1 point**



(ii) The firm's graph from part (a) must show an upward shift in the firm's marginal revenue (demand) curve at P_2 and the new profit-maximizing quantity for Soja Farms, labeled Q*. **1 point**



	Total for part (c)	**2 points**
(d)	State that the number of firms will increase in the long run and explain that the positive economic profits earned by soybean producers will encourage new firms to enter the market.	**1 point**
(e) (i)	State that demand for quinoa is inelastic and explain with **ONE** of the following. • The absolute value of the price elasticity of demand for quinoa is 0.2. • The 5% decrease in the quantity demanded of quinoa is less than the 25% increase in the price of quinoa.	**1 point**
(ii)	Calculate the cross-price elasticity of demand as 0.4 and show your work. $\text{Cross Price Elasticity of Demand} = \frac{\%\ \text{Change in } Q_D \text{ of Tofu}}{\%\ \text{Change in Price of Quinoa}} = \frac{10\%}{25\%} = 0.4$	**1 point**
	Total for part (e)	**2 points**
	Total for question 1	**10 points**

Question 2: Short — 5 points

(a)	State that the market equilibrium price is \$15, and the market equilibrium quantity is 300 units.	**1 point**
(b)	Calculate the deadweight loss as \$500 and show your work. $\text{Deadweight loss} = \frac{1}{2} \times (\$25 - \$15) \times (400 - 300) = \frac{1}{2} \times \$10 \times 100 = \$500$	**1 point**
(c) (i)	State that the government will grant a per-unit subsidy to consumers to achieve the socially optimal quantity of Good X and explain with **ONE** of the following: • A per-unit subsidy to consumers that internalizes external benefits increases the incentive and ability of consumers to buy the socially optimal quantity (400). • A per-unit subsidy to consumers equal to the marginal external benefit increases consumption to the socially optimal quantity (400), by lowering the price paid by the consumer. • A per-unit subsidy to consumers equal to the difference between marginal social benefit and marginal private benefit increases the quantity exchanged to the socially optimal quantity (400).	**1 point**
(ii)	State that the dollar value of the per-unit subsidy is \$10.	**1 point**
	Total for part (c)	**2 points**
(d)	State no, the price ceiling will not achieve the socially optimal quantity of Good X and explain that the price ceiling will cause the quantity exchanged in the market, which is limited by the quantity supplied (200), to be less than the socially optimal quantity (400).	**1 point**
	Total for question 2	**5 points**

Question 3: Short — 5 points

(a)	State that Field Cruiser's most profitable strategy is to improve Power.	**1 point**
(b)	State no, Nice Ride does not have a dominant strategy and explain that if Field Cruiser chooses Reliability, then Nice Ride will choose Comfort since $30 million is greater than $10 million, and if Field Cruiser chooses Power, then Nice Ride will choose Safety since $32 million is greater than $25 million.	**1 point**
(c)	State yes, the combination of strategies is a Nash Equilibrium and explain that if Field Cruiser unilaterally chooses Reliability, its profits will decrease from $35 million to $28 million and if Nice Ride unilaterally chooses Comfort, its profits will decrease from $32 million to $25 million.	**1 point**
(d)	State that the new firm's total profit will be $70 million.	**1 point**
(e)	State that Nice Ride's profit will be $30 million and Field Cruiser's profit will be $40 million at the Nash equilibrium.	**1 point**
	Total for question 3	**5 points**