		Field Cruiser: Reliability	Field Cruiser: Power
Nice Ride	Safety	$10 million, $28 million	$32 million, $35 million
	Comfort	$30 million, $40 million	$25 million, $20 million

3. Nice Ride and Field Cruiser are the only two producers of vehicles. Nice Ride is deciding whether to improve Safety or Comfort. Field Cruiser is deciding whether to improve Reliability or Power. The payoff matrix shows the payoffs for each combination of strategies. The first entry in each cell shows Nice Ride's profit, and the second entry shows Field Cruiser's profit. Each firm independently and simultaneously chooses its strategy. Assume the two firms know all the information in the matrix and do not cooperate.

   (a) What is Field Cruiser's most profitable strategy if Nice Ride chooses to improve Safety?

   (b) Does Nice Ride have a dominant strategy? Explain using numbers from the payoff matrix.

   (c) Is Nice Ride choosing to improve Safety and Field Cruiser choosing to improve Power a Nash equilibrium? Explain using numbers from the payoff matrix.

   (d) Suppose Nice Ride and Field Cruiser decide to merge to maximize combined profits and choose to keep producing both Nice Ride and Field Cruiser vehicles. Assuming the values in the payoff matrix do not change, what would be the new firm's total profit?

   (e) Suppose instead that a change in fuel prices reduces the profitability of choosing to improve Power by $10 million for Field Cruiser. Identify each firm's profit at the Nash equilibrium.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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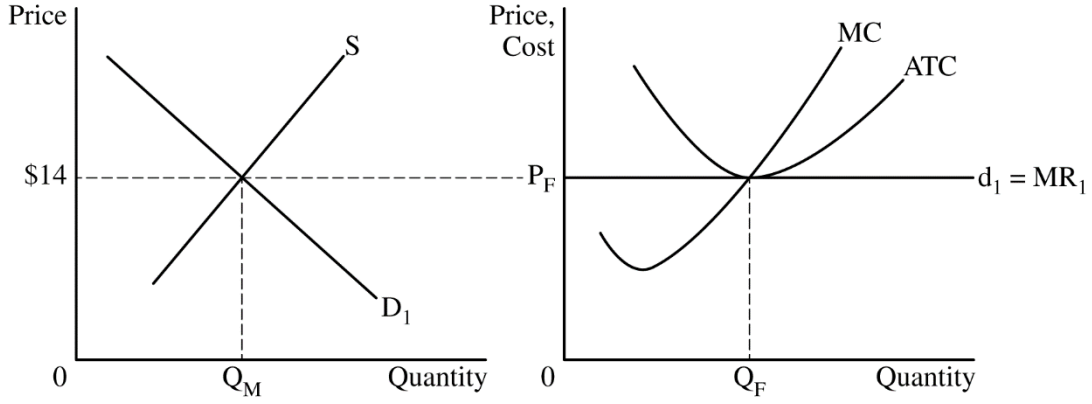
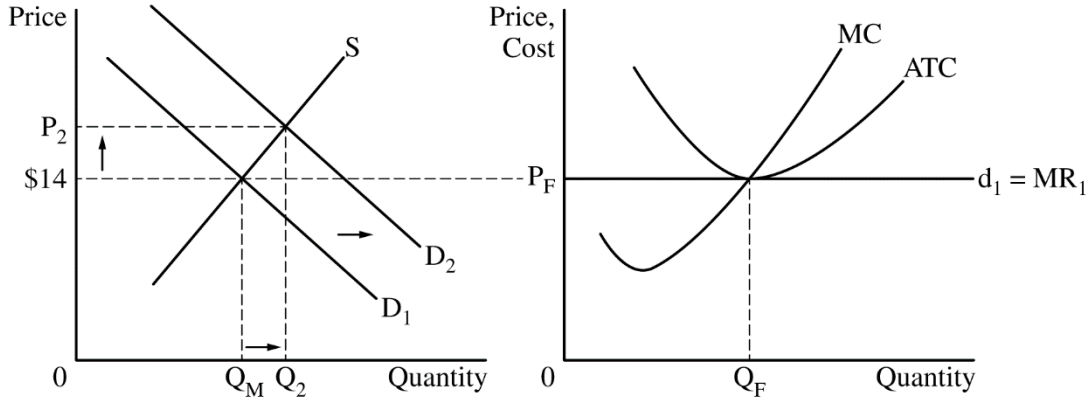
For the fourth point, the firm's graph must show the average total cost (ATC) curve tangent to the firm's demand curve at Q_F and show the MC curve passing through the minimum point of the ATC curve. **1 point**



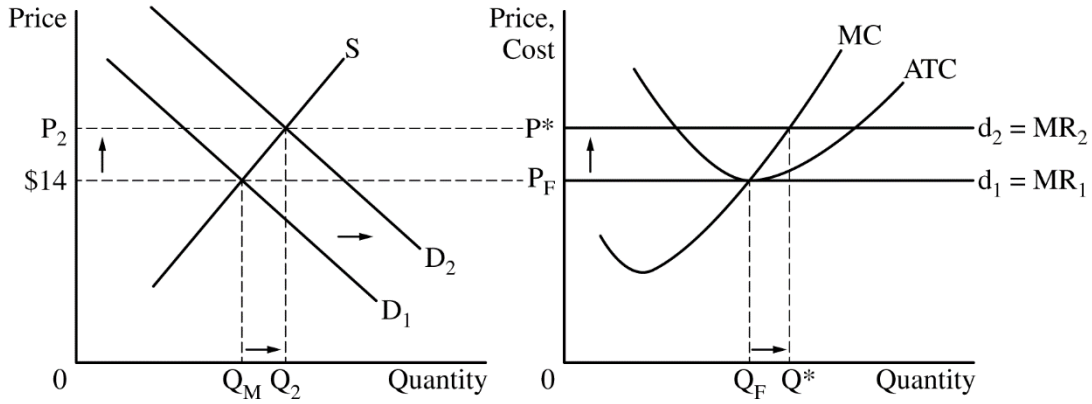
Total for part (a) **4 points**

(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**



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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**

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