



Scoring Guidelines

Question 1: Long

1. On the island of Gratin, potatoes are produced in a perfectly competitive constant cost industry. The market for potatoes is currently in long-run equilibrium at the market price of \$5 per sack.
 - (a) Draw correctly labeled side-by-side graphs for the potato market and for farmer Lamo and show each of the following.
 - (i) The market equilibrium quantity and price, labeled Q_M and \$5, respectively
 - (ii) The quantity produced and the price for farmer Lamo, labeled Q_L and \$5, respectively
 - (b) Believing that the incomes of potato farmers are unfairly low, the government of Gratin imposes a binding price floor at \$7 per sack. The government will purchase any surpluses of potatoes. On your graph in part (a), show each of the following.
 - (i) The market quantity of potatoes that would be supplied at the price floor, labeled Q_F
 - (ii) The profit farmer Lamo earns, shaded completely
 - (c) If the absolute value of the price elasticity of demand is 0.92, would consumer spending on potatoes increase, decrease, or stay the same as a result of the price floor? Explain.
 - (d) How would the price floor affect the demand for labor by potato farmers?
 - (e) Potatoes, corn, and rice are all produced on the island of Gratin in perfectly competitive markets.
 - (i) Assume corn is a substitute in production (an alternate output) for potatoes. How would setting the price floor on potatoes affect the equilibrium price and quantity of corn?
 - (ii) As a result of an increase in the price of rice, the demand for potatoes increased. Are rice and potatoes substitutes or complements in consumption?

Scoring Guidelines for Question 1: Long

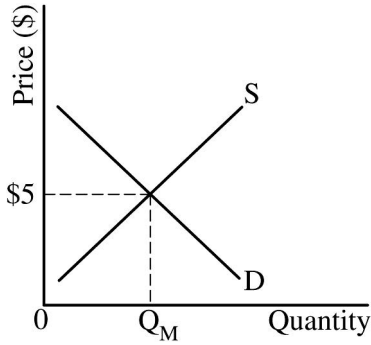
10 points

Learning Objectives: MKT-3.B MKT-3.D MKT-3.E POL-4.A PRD-3.A PRD-4.B

- (a) Draw a correctly labeled graph of the potato market that shows the market equilibrium quantity and price labeled Q_M and \$5, respectively.

1 point
4.A

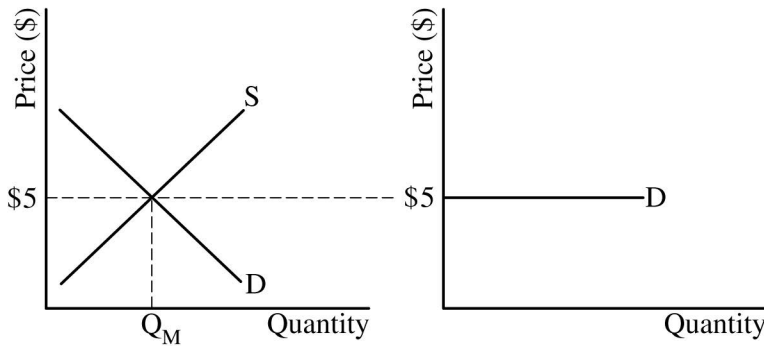
Task type: Create graphs or visual representations



- Draw a correctly labeled graph for farmer Lamo next to the graph of the potato market that shows a horizontal demand curve for Lamo coming from the market equilibrium price of \$5.

1 point
4.A

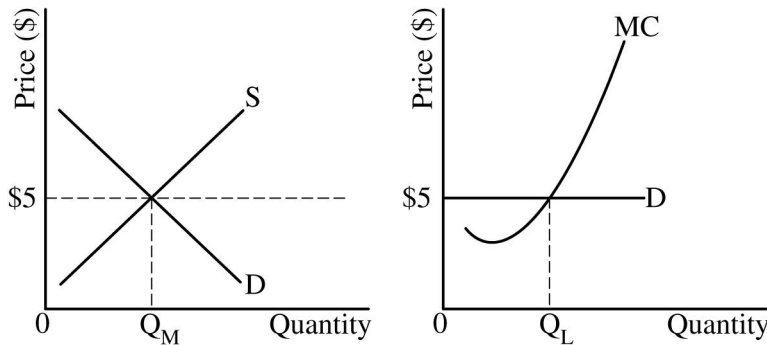
Task type: Create graphs or visual representations



- Show the profit-maximizing quantity Q_L , where $P = MC$.

1 point
4.B

Task type: Create graphs or visual representations

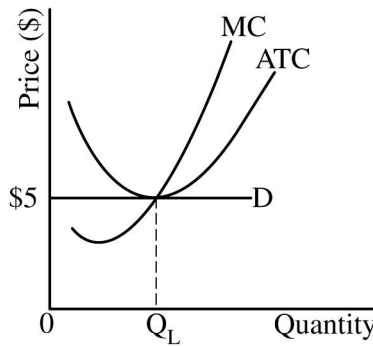
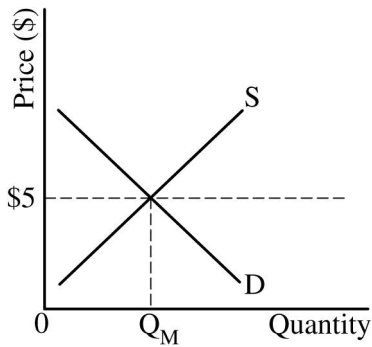


Show the ATC curve tangent to Lamo's demand curve at Q_L .

1 point

Task type: Create graphs or visual representations

4.B



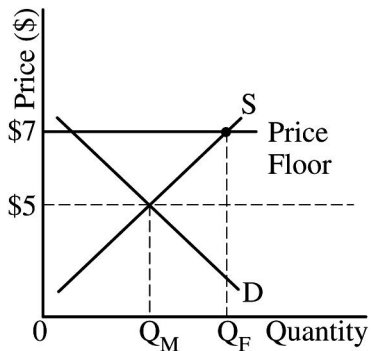
Total for part (a) 4 points

- (b) (i) On the graph from part (a), show the market quantity of potatoes that would be supplied at the price floor, labeled Q_F .

1 point

4.C

Task type: Create graphs or visual representations

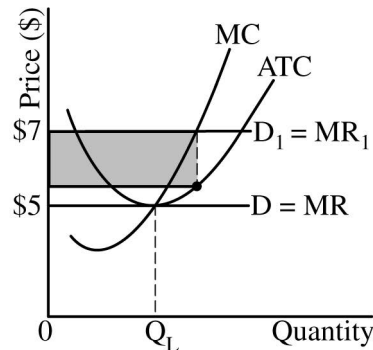
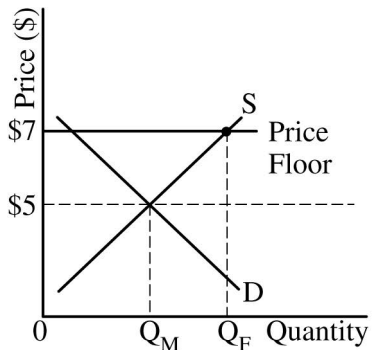


- (ii) On the graph from part (a), show the profit farmer Lamo earns with the price floor, shaded completely.

1 point

4.C

Task type: Create graphs or visual representations



Total for part (b) 2 points

- (c) State that consumer spending on potatoes will increase and explain that because the demand for potatoes is inelastic, the price increase will result in an increase in total spending. (It is also acceptable to explain that because demand is inelastic, the percentage increase in price outweighs the percentage decrease in the quantity demanded of potatoes, resulting in an increase in total spending on potatoes.)

1 point

3.C

Task type: Explain

(d) State that the demand for labor will increase and/or the demand curve will shift to the right. **1 point**

Task type: Make an assertion

3.B

(e) (i) State that the equilibrium price of corn will increase and the equilibrium quantity of corn will decrease. **1 point**

Task type: Make an assertion

3.B

(ii) State that potatoes and rice are substitutes in consumption.

1 point

Task type: Make an assertion

2.A

Total for part (e) 2 points

Total for question 1 10 points

Question 2: Short

2. Two discount stores, Discount Delight and Bargain Floor, sell a popular brand of athletic shoes. They are considering including these shoes in their upcoming sale. The relevant payoff matrix appears below, with the first entry in each cell indicating Discount Delight's profit from shoe sales and the second entry in each cell indicating Bargain Floor's profit. The two firms know all the information in the payoff matrix and do not cooperate.

		Bargain Floor	
		Includes	Does Not Include
Discount Delight	Includes	\$150, \$180	\$200, \$100
	Does Not Include	\$100, \$250	\$240, \$220

- If Discount Delight does not include the shoes in its sale but Bargain Floor includes them, what will Bargain Floor's profit be?
- Does either player have a dominant strategy? If so, identify the player and the strategy.
- Using numbers from the table, explain why both stores choosing not to include the shoes in their respective sales does **not** correspond to a Nash equilibrium.
- Identify the Nash equilibrium strategy for each store.
- If the two stores could cooperate in choosing their strategies, would the outcome change? Explain.

Scoring Guidelines for Question 2: Short

5 points

Learning Objectives: **PRD-3.C**

- | | | |
|-----|--|-----------------------|
| (a) | State that Bargain Floor's profit will be \$250.
<i>Task type: Perform numerical analysis</i> | 1 point
1.C |
| (b) | State yes and identify that including the shoes in its sale is the dominant strategy for Bargain Floor.
<i>Task type: Perform numerical analysis</i> | 1 point
1.C |
| (c) | Explain that it is not a Nash equilibrium because Bargain Floor has an incentive to move to including the shoes in its sale, earning \$30 more (\$250 > \$220).
<i>Task type: Explain</i> | 1 point
2.C |
| (d) | Identify the Nash equilibrium strategy for each store as choosing to include the shoes in the sale.
<i>Task type: Perform numerical analysis</i> | 1 point
2.C |
| (e) | State yes and explain that by both agreeing to not include the shoes in their sales, they would both increase their profits.
<i>Task type: Explain</i> | 1 point
3.C |

Total for question 2 5 points