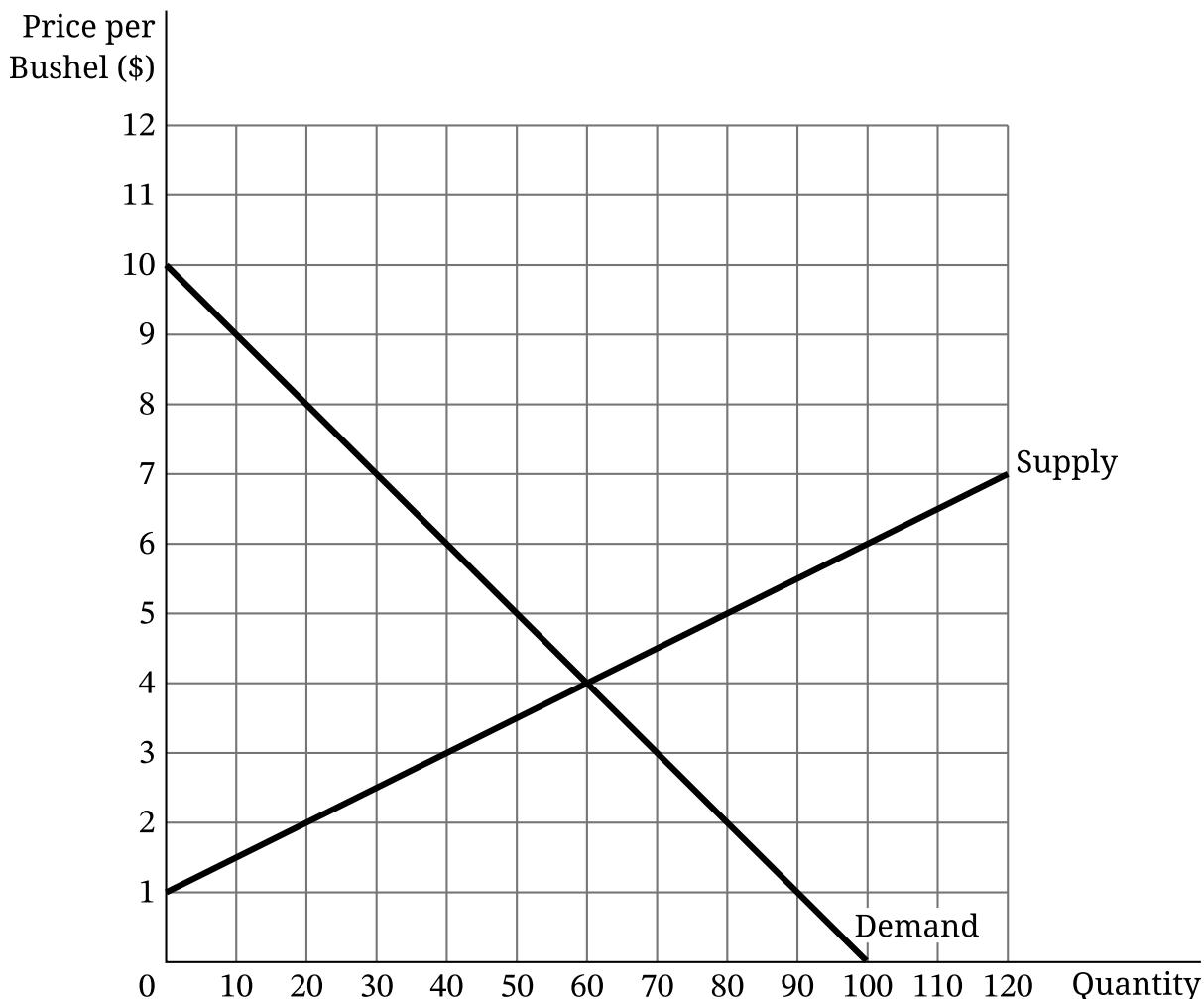


- 1.** Voda Reservoir is a profit-maximizing firm and the only producer of bottled water in a country. Currently, Voda Reservoir is earning negative economic profit.
- A.** Draw a correctly labeled graph for Voda Reservoir and show each of the following.
- The profit-maximizing quantity, labeled Q_M
 - The profit-maximizing price, labeled P_M
 - The average total cost curve consistent with Voda Reservoir earning negative economic profit, labeled ATC
 - The area of deadweight loss, shaded completely
- B.** Suppose the government requires Voda Reservoir to produce the socially optimal quantity of bottled water. On your graph in part A, show the socially optimal quantity of bottled water, labeled Q_S .
- C.** Suppose instead the government grants a per-unit subsidy to Voda Reservoir. What will happen to Voda Reservoir's profit-maximizing quantity of bottled water? Explain.
- D.** Suppose new producers have entered the bottled-water market and Voda Reservoir continues to operate in the bottled-water market. Will the demand for Voda Reservoir's bottled water become more elastic, become less elastic, or stay the same as new producers enter the market?
- E.** Voda Reservoir hires workers in a perfectly competitive labor market.
- If the demand for bottled water increases, what will happen to Voda Reservoir's demand for labor? Explain.
 - The government implements a new regulation that increases the minimum age required for a worker to be employed in a bottled-water factory. What will happen to the market wage in the short run? Explain.

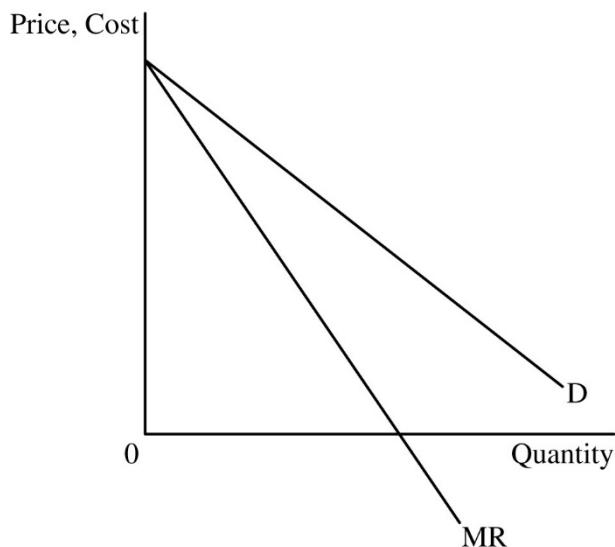
2. The graph provided shows the market for rice in the country of Rushland.



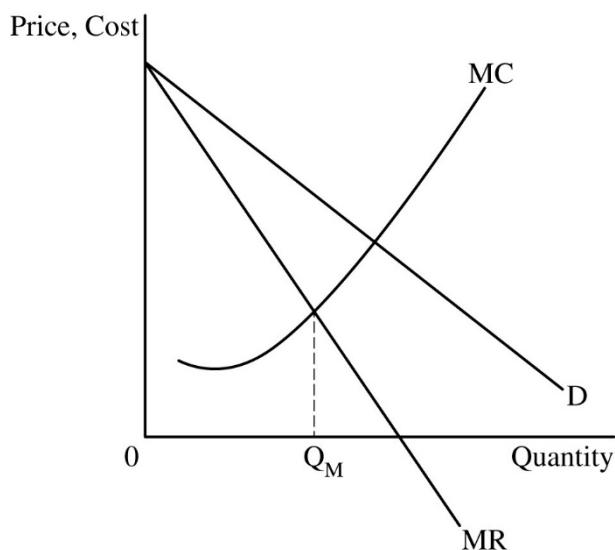
- A. Calculate the total economic surplus at market equilibrium. Show your work.
- B. If the government sets a price floor at \$3 per bushel, will there be a surplus, a shortage, or neither? Explain.
- C. Suppose that instead of the price floor, Rushland engages in international trade and the world price of rice is \$5 per bushel.
- Will Rushland export or import rice? Explain using numbers from the graph.
 - Calculate the domestic consumer surplus when Rushland engages in international trade. Show your work.
 - Calculate the total revenue that Rushland's farmers will earn at the world price. Show your work.

Question 1: Long**10 points**

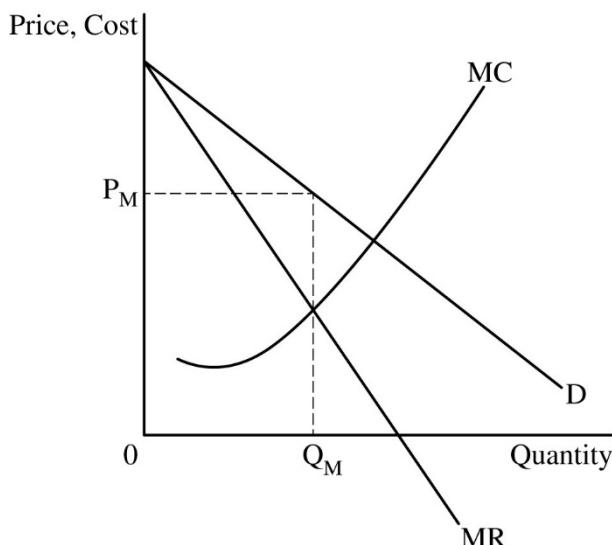
- A** Draw a correctly labeled graph for Voda Reservoir with a downward-sloping demand (D) curve and a downward-sloping marginal revenue (MR) curve with the MR curve below the D curve. **1 point**
- Point 1



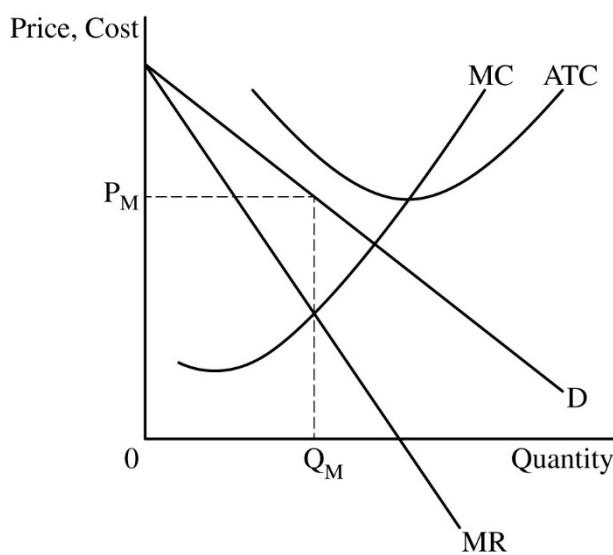
- Point 2 The graph must show a rising marginal cost (MC) curve and the profit-maximizing quantity, labeled Q_M , where $MR = MC$. **1 point**



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- Point 3 The graph must show the profit-maximizing price, labeled P_M , from the D curve at Q_M . **1 point**

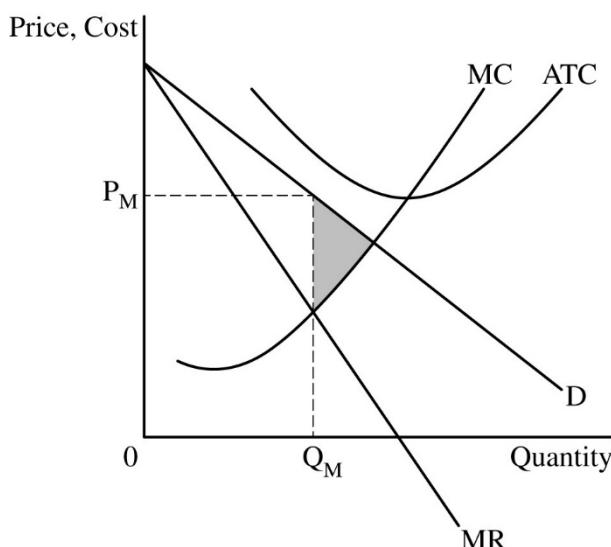


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- Point 4 The graph must show the average total cost (ATC) curve above the D curve and show the MC curve passing through the minimum point of the ATC curve. **1 point**



Point 5 The graph must show the area of deadweight loss, shaded completely.

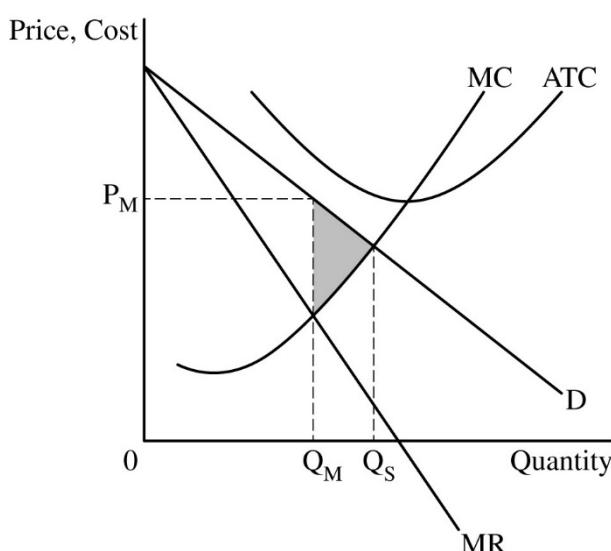
1 point



B The graph from part A must show the socially optimal quantity of bottled water, labeled Q_S , from the intersection of the D and MC curves.

1 point

Point 6 **1 point**



C State that Voda Reservoir's profit-maximizing quantity of bottled water will increase

1 point

Point 7 and explain with **ONE** of the following:

- The per-unit subsidy decreases the firm's marginal cost, which shifts the MC curve to the right (down), intersecting the MR curve at a greater quantity.
- The per-unit subsidy increases the firm's marginal revenue, which shifts the MR curve to the right, intersecting the MC curve at a greater quantity.

D State that the demand for Voda Reservoir's bottled water will become more elastic.

1 point

Point 8

- E (i) State that Voda Reservoir's demand for labor will increase and explain that the increase in demand for bottled water will increase the price and marginal revenue of bottled water, increasing the marginal revenue product of labor. **1 point**

Point 9

(ii) State that the market wage will increase in the short run and explain that the new regulation will decrease the supply of workers. **1 point**

Point 10