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2021

AP® Microeconomics

Sample Student Responses and Scoring Commentary Set 1

Inside:

Free Response Question 1

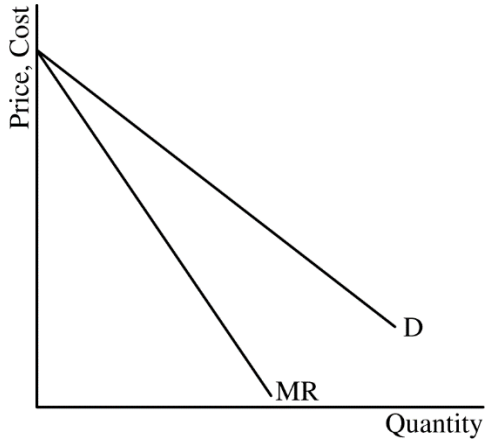
- ☑ **Scoring Guideline**
- ☑ **Student Samples**
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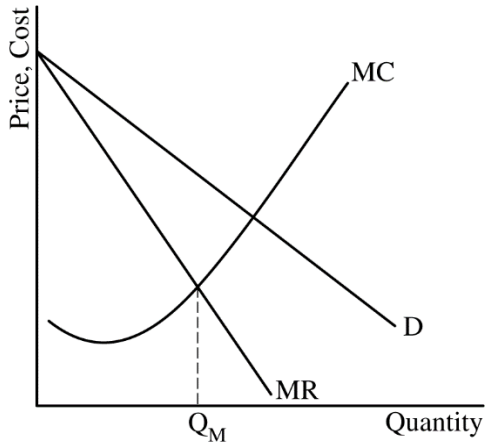
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Question 1: Long — 10 points

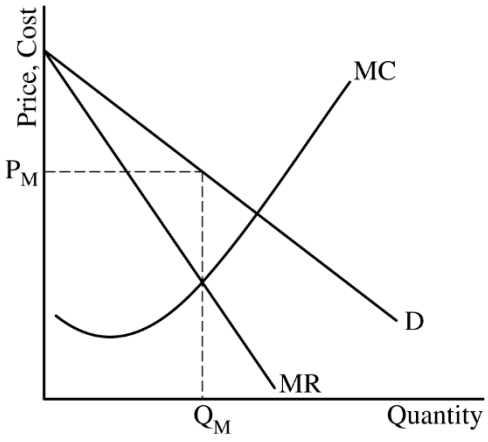
(a) Draw a correctly labeled graph for SkyRunner Airlines showing downward sloping demand (D) and marginal revenue (MR) curves with the MR curve below the demand curve. **1 point**



For the second point, the graph must show the marginal cost (MC) curve and the profit-maximizing quantity, labeled Q_M, where MR=MC. **1 point**

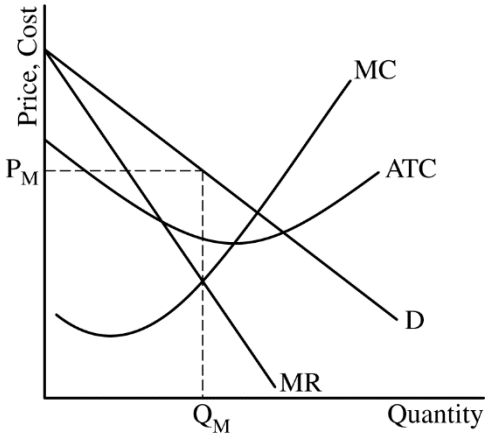


For the third point, the graph must show the profit-maximizing price, labeled P_M, from the demand curve at Q_M. **1 point**

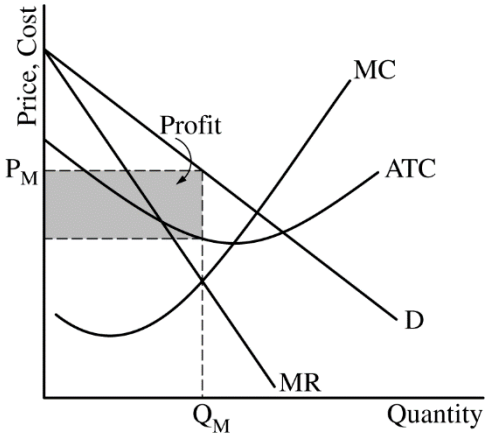


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For the fourth point, the graph must show the ATC curve below the demand curve at Q_M with the MC curve rising and intersecting the ATC at its minimum point. **1 point**

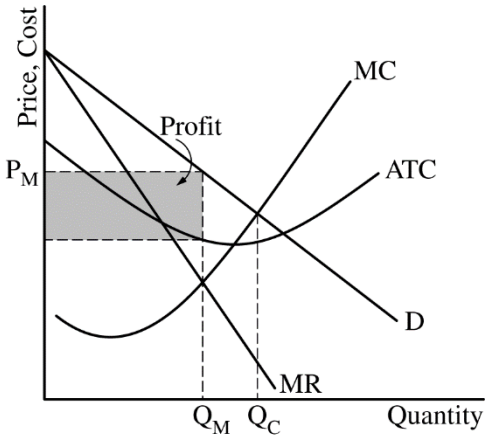


For the fifth point, the graph must show a completely shaded area of profit representing $(P_M - \text{ATC at } Q_M) \times Q_M$. **1 point**



Total for part (a) 5 points

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(b)	On your graph from part (a), show the quantity that is consistent with the goal of eliminating all deadweight loss as Q_C.  	**1 point**
(c) (i)	State that the number of tickets SkyRunner sells will decrease and explain that the entry of new firms will reduce the demand for SkyRunner's service.	**1 point**
(ii)	State that the price elasticity of demand for SkyRunner Airlines' service will increase and explain that the entry of new firms will increase the number of substitutes available to consumers.	**1 point**
(iii)	State that SkyRunner Airlines' profit will be zero or decrease toward zero.	**1 point**
(iv)	State that the deadweight loss will decrease and explain that the entry of new firms increases the total market output (services provided) and moves the output closer to the socially optimal output.	**1 point**
	Total for part (c)	**4 points**
	Total for question 1	**10 points**

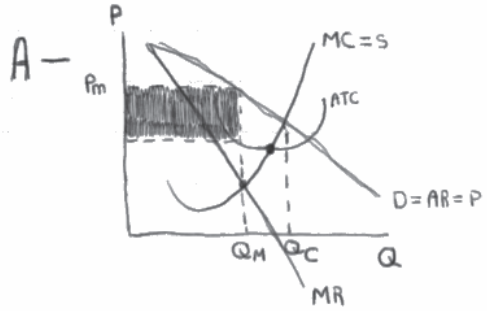
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Q1 Sample A Page 1 of 1

Question 1 ● Question 2 ○ Question 3 ○

Begin your response to each question at the top of a new page.

A –



B – labled "Qc" on graph

C – (i) – more firms that produce the same good will be available so more substitutes so the quantity sold will be more distributed so it will decrease for SkyRunner

(ii) – It will become more price elastic because more airlines will now be available so if they mark up their price then they will easily lose consumers to a substitute airline. And elastic means quick and easy changes.

(iii) – decrease

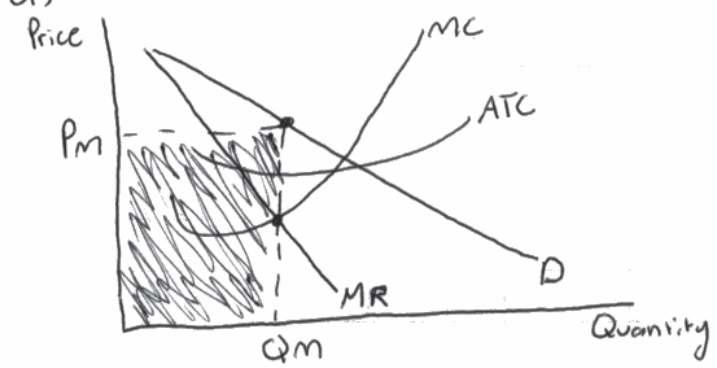
(iv) – It will no longer have deadweight loss because now there are No barriers to entry so SkyRunner is no longer a single monopoly on the island. No barries is not a quality of monopolies which is why there is no more deadweight loss

Q1 Sample B Page 1 of 1

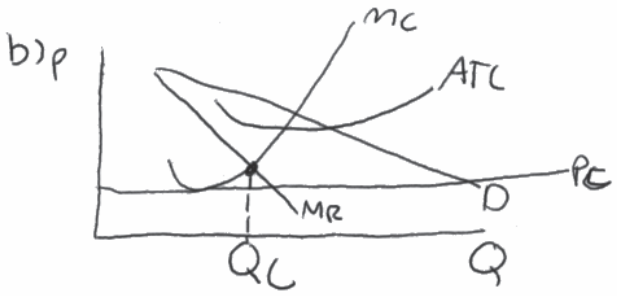
Question 1 Question 2 Question 3

Begin your response to each question at the top of a new page.

a)



b)



c) i) The Quantity sold will increase because when SkyRunner was a monoply, they sold at high Prices, so now that Prices are Lower, Quantity demande will increase.

ii) Demand for Sky runne will become more elastic because before, as a monoply, they could Put the Price high and consumers would have to Pay it, but now the demand is affected by Prices of tickets

iii) Skyrunner Profits will decrease.

iv) The dead weight loss will decrease ~~because~~ because before, Skyrunner wasn't efficent and had DWL because it was a monoPoly, But now it is efficent.

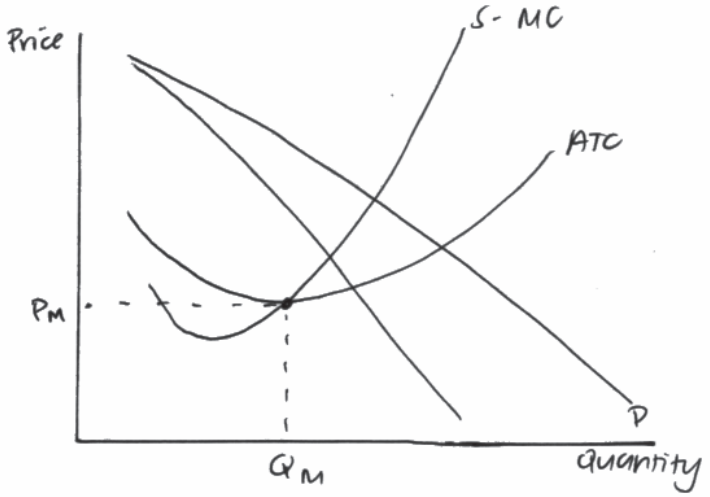
Page 2

Q1 Sample C Page 1 of 2

Question 1 ● Question 2 ○ Question 3 ○

Begin your response to each question at the top of a new page.

a)



c) i) The quantity of tickets sold by SkyRunner will increase because the price ceiling will cause consumers to be more willing to buy tickets at the lower price.

ii) The price elasticity of demand for SkyRunner's airline service will increase because the elimination of their monopoly rights will allow consumers to ~~buy~~ buy ~~more or less~~ larger or smaller quantities based on the price. ~~more~~ As price increases, consumers will buy less tickets. This means that SkyRunner's demand curve is more elastic than it was before.

Question 1 ● Question 2 ○ Question 3 ○

Begin your response to each question at the top of a new page.

iii) Sky Runner's profits will increase because the price ceiling will cause consumers to be more willing to buy tickets from them.

iv) Deadweight loss in the market will decrease because the price ceiling and elimination of rights to monopoly will cause the producer surplus to decrease and the consumer surplus to increase, decreasing or eliminating deadweight loss.

Question 1

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

The question assessed students' understanding of the market conditions for monopoly, how a monopoly would operate under these conditions, how a change in market conditions would affect firm behavior, and market efficiency. Students were expected to draw and label a graph for a monopoly earning positive economic profit without regulation and show how the quantity of tickets sold by the firm would change in response to a price ceiling set to eliminate deadweight loss. Students were also expected to analyze a change in market conditions to determine how the elimination of the firm's monopoly rights would affect the quantity of tickets sold by the firm, the price elasticity of demand for the firm's service, the firm's profit, and the deadweight loss in the market.

The question stated that the government of an island nation has granted SkyRunner Airline exclusive monopoly rights to serve the island, and SkyRunner is earning a positive economic profit. In part (a) students were asked to draw a correctly labeled graph for a monopoly. Parts (a)(i) and (a)(ii) asked students to show the profit-maximizing quantity and price, labeled as Q_M and P_M, respectively. These parts of the question test students' knowledge of market conditions for a monopoly and their ability to illustrate these concepts using a graph. This task included demonstrating knowledge of revenue and cost conditions by drawing a downward-sloping demand curve (D) and a downward-sloping marginal revenue curve (MR) that lies below the demand curve and both the marginal cost (MC) and the average total cost (ATC) curves. Students had to draw both the marginal cost curve (MC) and average total cost (ATC) curves. Students were asked to show that the profit-maximizing quantity (Q_M) occurs where MR equals MC and that the profit-maximizing price (P_M) is determined by identifying the price that corresponds to this quantity from the demand curve. These tasks required students to demonstrate marginal analysis in a graphical format. Students also had to draw an ATC curve consistent with the given positive economic profit condition by having the ATC curve below the demand curve at the profit-maximizing quantity and having ATC's minimum where the rising MC curve and ATC curve intersected. Part (a)(iii) asked students to shade in the area representing profits. This task required students to graphically illustrate the area of profit by shading the area of the rectangle from P_M on the y-axis, over to the demand curve at Q_M, down to the ATC curve and over to the y-axis.

For parts (b) and (c), the island's tourist bureau asks the government to consider two proposals. Proposal I was to set a price ceiling on tickets that eliminates all deadweight loss, and Proposal II is to eliminate SkyRunner's monopoly rights.

Part (b) of this question told students to suppose that the government has adopted Proposal I. Students were asked to indicate on their graph from part (a) the quantity of tickets sold in the short run under Proposal I. This part required students to demonstrate knowledge of the quantity that would eliminate deadweight loss occurs at the intersection of the demand and marginal cost curves (P=MC).

Part (c) of this question asked students to identify and explain the effects of Proposal II on SkyRunner and the market for airline services in the long run. Part c(i) asked students to explain what would happen to the number of tickets sold by SkyRunner. Students needed to state that the number of tickets sold by SkyRunner would decrease because the entry of new firms would reduce the demand for SkyRunner's service. Part c(ii) asked students to explain the impact on the price elasticity of demand for SkyRunner's service. Students needed to state that the price elasticity of demand would increase because the entry of new firms would increase the number of available substitutes. Part c(iii) asked students to state what would happen to SkyRunner's profits. Students needed to assert that SkyRunner's profits would decrease. Part c(iv) asked students to explain what would happen to deadweight loss in the market. Students needed to state that

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Question 1 (continued)

deadweight loss would decrease because the entry of new firms into the market increases the total market output and moves the output closer to the socially optimal output.

Sample: 1A
Score: 9

Part (a): 5 points

- The response earned the first point in part (a) because the response shows a correctly labeled graph showing downward sloping demand part (d) and marginal revenue (MR) curves with the MR curve below the demand curve.
- The response earned the second point in part (a) because the response shows the profit-maximizing quantity, labeled Qm, where MR=MC.
- The response earned the third point in part (a) because the response shows the profit-maximizing price, labeled Pm, from the demand curve at Qm.
- The response earned the fourth point in part (a) because the response shows the average total cost (ATC) curve below the demand curve at Qm with the MC curve rising and intersecting the ATC at its minimum point.
- The response earned the fifth point in part (a) because the response shows a shaded area of profit representing area (Pm-ATC at Qm) x Qm.

Part (b): 1 point

- The response earned the point in part (b) because the response shows a quantity shown on the graph, labeled Qc, that is consistent with the goal of eliminating all deadweight loss.

Part (c): 4 points

- The response earned the point in part (c)(i) because the response states that the number of tickets SkyRunner sells will decrease and explains that the entry of new firms will reduce the demand for SkyRunner's service.
- The response earned the point in part (c)(ii) because the response states that the price elasticity of demand for SkyRunner Airlines' service will increase and explains that the entry of new firms will increase the number of substitutes available to consumers.
- The response earned the point in part (c)(iii) because the response states that SkyRunner Airline's profit will be zero or decrease toward zero.
- The response did not earn the point in part (c)(iv) because the response does not state that the deadweight loss will decrease or does not sufficiently explain that the entry of new firms increases the total market output (services provided) and moves the output closer to the socially optimal output.

Sample: 1B
Score: 4

Part (a): 5 points

- The response earned the first point in part (a) because the response shows a correctly labeled graph showing downward sloping demand part (d) and marginal revenue (MR) curves with the MR curve below the demand curve.
- The response earned the second point in part (a) because the response shows the profit-maximizing quantity, labeled Qm, where MR=MC.
- The response earned the third point in part (a) because the response shows the profit-maximizing price, labeled Pm, from the demand curve at Qm.

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Question 1 (continued)

- The response did not earn the fourth point in part (a) because the response shows the average total cost (ATC) curve below the demand curve at Qm, but the response does not show the MC curve intersecting the ATC curve at its minimum point (ATC is upward-sloping at the intersection of MC and ATC).
- The response did not earn the fifth point in part (a) because the response does not show a shaded area of profit representing area (Pm-ATC at Qm) x Qm.

Part (b): 1 point

- The response did not earn the point in part (b) because the response does not show a quantity shown on the graph, labeled Qc, that is consistent with the goal of eliminating all deadweight loss.

Part (c): 4 points

- The response did not earn the point in part (c)(i) because the response does not state that the number of tickets SkyRunner sells will decrease.
- The response did not earn the point in part (c)(ii) because the response does state that the price elasticity of demand for SkyRunner Airlines' service will increase but does not sufficiently explain that the entry of new firms will increase the number of substitutes available to consumers.
- The response earned the point in part (c)(iii) because the response states that SkyRunner Airline's profit will be zero or decrease toward zero.
- The response did not earn the point in part (c)(iv) because the response does state that the deadweight loss will decrease but does not sufficiently explain that the entry of new firms increases the total market output (services provided) and moves the output closer to the socially optimal output.

Sample: 1C
Score: 1

Part (a): 5 points

- The response did not earn the first point in part (a) because while the response shows a correctly labeled graph with a downward sloping demand part (d) curve, there is no marginal revenue (MR) curve labeled.
- The response did not earn the second point in part (a) because the response does not show the profit-maximizing quantity, labeled Qm, where MR=MC.
- The response did not earn the third point in part (a) because the response does not show the profit-maximizing price, labeled Pm, from the demand curve at Qm.
- The response earned the fourth point in part (a) because the response shows the average total cost (ATC) curve below the demand curve at Qm with the MC curve rising and intersecting the ATC at its minimum point.
- The response did not earn the fifth point in part (a) because the response does not show a shaded area of profit representing area (Pm-ATC at Qm) x Qm.

Part (b): 1 point

- The response did not earn the point in part (b) because the response does not show a quantity shown on the graph, labeled Qc, that is consistent with the goal of eliminating all deadweight loss.

Part (c): 4 points

- The response did not earn the point in part (c)(i) because the response does not state that the number of tickets SkyRunner sells will decrease.

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Question 1 (continued)

- The response did not earn the point in part (c)(ii) because the response does state that the price elasticity of demand for SkyRunner Airlines' service will increase but does not sufficiently explain that the entry of new firms will increase the number of substitutes available to consumers.
- The response did not earn the point in part (c)(iii) because the response does not state that SkyRunner Airline's profit will be zero or decrease toward zero.
- The response did not earn the point in part (c)(iv) because the response does state that the deadweight loss will decrease but does not sufficiently explain that the entry of new firms increases the total market output (services provided) and moves the output closer to the socially optimal output.

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