

**AP[®] MICROECONOMICS
2015 SCORING GUIDELINES**

Question 2

5 points (1+1+3)

(a) 1 point:

- One point is earned for stating that Breadbasket has a dominant strategy of setting a low price but Quicklunch does not have a dominant strategy.

(b) 1 point:

- One point is earned for correctly identifying the profit for Breadbasket is \$120 and the profit for Quicklunch is \$80.

(c) 3 points:

- One point is earned for redrawing the payoff matrix with the subsidy:

		Quicklunch	
		High Price	Low Price
Breadbasket	High Price	\$105, \$110	\$40, \$150
	Low Price	\$140, \$80	\$95, \$90

- One point is earned for stating that Quicklunch will choose a low price strategy and for explaining that with the subsidy Quicklunch will earn higher profits if it charges a lower price than if it charges a higher price. (The explanation has to include $\$90 > \80 or profits increase by \$10.)
- One point is earned for stating that Breadbasket's profits will decrease from \$120 to \$95.

ANSWER PAGE FOR QUESTION 2

a) i) Breadbasket has a dominant strategy to set a low price.

ii) Quicklunch has no dominant strategy.

b) i) \$120

ii) \$80

c)

Quicklunch

		Quicklunch	
		High price	Low price
Breadbasket	High price	\$105, \$110	\$40, \$150
	Low price	\$140, \$80	\$95, \$90

i) Quicklunch would choose to set a low price.

Quicklunch now has a dominant strategy to set a low price because if Breadbasket sets a high price, Quicklunch would earn \$150 by setting a low price vs. \$110 by setting a high price. If Breadbasket sets a low price, Quicklunch would earn \$90 by setting a low price vs. \$80 by setting a high price.

ii) Since Breadbasket has a dominant strategy to set a low price and Quicklunch has a dominant strategy to set a low price, each firm would set low prices, and Breadbasket would earn \$95 in profits. Hence, Breadbasket's profits would decrease from \$120 to \$95.

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a. Breadbasket's dominant strategy is to charge low prices.

Quick lunch does not have a dominant strategy.

b. For the Nash equilibrium, the ~~the~~ profit for Breadbasket will be \$120 and the profit for Quick lunch will be \$80

c.

Quick lunch

		Quick lunch	
		High	Low
Breadbasket	High	\$105, \$110	\$40, \$150
	Low	\$140, \$80	\$95, \$90

i. Breadbasket's dominant strategy is still to charge a low price because if Quick lunch charges a high price, Breadbasket will make \$140 at a low price as opposed to \$105 at a high price. And if ~~Bread~~ Quick lunch sets a low price, Breadbasket will make \$95 at a low price instead of \$40 at a high price. So regardless of Quick lunch's actions, Breadbasket will earn a higher profit when they set a low price.

ii. Breadbasket's profits would increase with the government subsidy by \$20 going from \$120 to \$140.

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ANSWER PAGE FOR QUESTION 2

a. i Price Low

ii Price High

b. i \$75

ii \$70 QL

c. High Price Low Price

BB

High Price	\$105	\$110	\$40	\$150
Low Price	\$140	\$80	\$95	\$90

i Price High b/c they would make more profit this way than Breadbasket

ii It only increases if they decide to price low

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AP[®] MICROECONOMICS

2015 SCORING COMMENTARY

Question 2

Overview

The question assessed students' ability to read and interpret a game theory matrix and to identify whether a dominant strategy exists or not. Without a dominant strategy for one sandwich shop, the question asked students to identify the Nash equilibrium payoffs for each sandwich shop when the two shops do not cooperate. The question then assessed students' ability to redraw the matrix if the government would subsidize each sandwich shop that chooses to offer a low price. Using the redrawn matrix, students then had to identify if the subsidy changed either shop's strategy as well as compare profits with and without the subsidy.

Sample: 2A

Score: 5

The student answered all parts of the question correctly and earned all 5 points.

Sample: 2B

Score: 3

The student earned 1 point in part (a) for correctly identifying that Breadbasket's dominant strategy is to set a low price and that Quicklunch does not have a dominant strategy. The student earned 1 point in part (b) for correctly identifying Breadbasket's profits as \$120 and Quicklunch's profits as \$80. The student earned 1 point in part (c) for correctly redrawing the matrix with the subsidy.

Sample: 2C

Score: 1

The student earned 1 point in part (c) for correctly redrawing the matrix with the subsidy.