AP®

AP® Microeconomics
2015 Free-Response Questions

CollegeBoard

MICROECONOMICS
Section II
Planning time—10 minutes
Writing time—50 minutes

Directions: You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

1. A typical profit-maximizing firm in a perfectly competitive constant-cost industry is earning a positive economic profit.

    (a) Is the market price greater than, less than, or equal to the firm's price? Explain.

    (b) Draw correctly labeled side-by-side graphs for both the market and a typical firm and show each of the following.

    (i) Market price and quantity, labeled P_m and Q_m

    (ii) The firm's quantity, labeled Q_f

    (iii) The firm's average revenue curve, labeled AR

    (iv) The firm's average total cost curve, labeled ATC

    (v) The area representing total cost, shaded completely

    (c) If one firm in the market were to raise its price, what will happen to its total revenue? Explain.

    (d) Now suppose the market is in long-run equilibrium. The government gives a lump-sum subsidy to each firm producing in the industry. Indicate whether each of the following will increase, decrease, or remain the same.

    (i) The firm's quantity in the short run. Explain.

    (ii) The market price and quantity in the long run. Explain.

2. Breadbasket and Quicklunch are the only two sandwich shops serving a small town. Each shop can choose to set a high price or a low price for sandwiches. The payoff matrix below shows the daily profits for each combination of prices that the two shops could choose. The first entry shows Breadbasket's profits, and the second entry shows Quicklunch's profits. Assuming that both shops know the information shown in the matrix, answer the following.

		Quicklunch	
		High Price	Low Price
Breadbasket	High Price	\$105, \$110	\$40, \$130
	Low Price	\$120, \$80	\$75, \$70

(a) Does each shop have a dominant strategy to set a high price, a dominant strategy to set a low price, or does it have no dominant strategy?

(i) Breadbasket

(ii) Quicklunch

(b) If the two shops do not cooperate on setting prices, what will be the profit for each shop?

(i) Breadbasket

(ii) Quicklunch

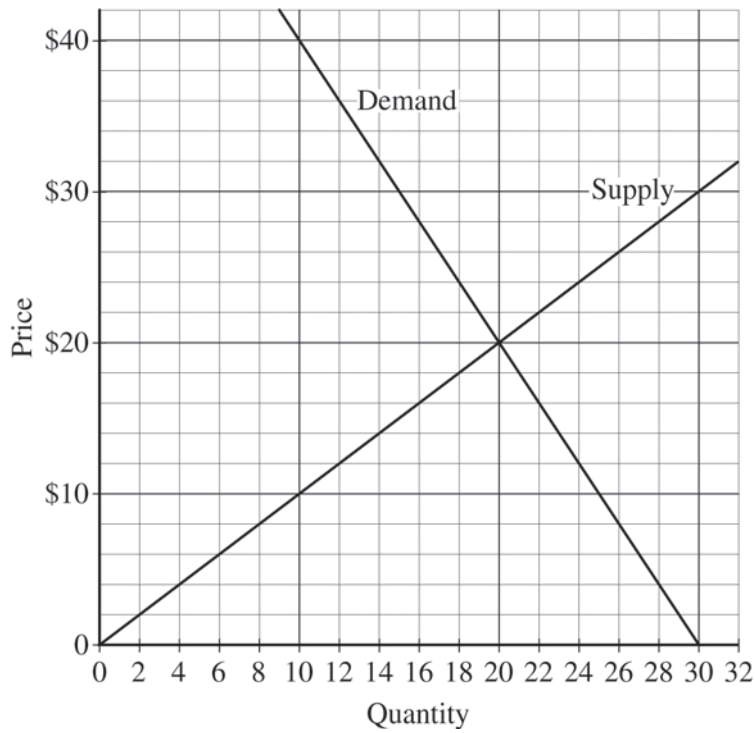
(c) The town government is concerned that food prices are too high. It decides to give a daily subsidy of \$20 to any shop that chooses to set a low price for its food items. Redraw the payoff matrix under the government subsidy system.

Using your redrawn payoff matrix, answer each of the following.

(i) Would Quicklunch choose to set a high price or a low price? Explain using specific values from your redrawn matrix.

(ii) Would the profits for Breadbasket increase, decrease, or stay the same? Explain with a comparison to your answer in part (b)(i). Use the specific values.

3. The graph below shows the market for widgets. The government is considering intervening in this market.



(a) Calculate the total producer surplus at the market equilibrium price and quantity. Show your work.

(b) If the government imposes a price floor at $16, is there a shortage, a surplus, or neither? Explain.

(c) If instead the government imposes a price ceiling at $12, is there a shortage, a surplus, or neither? Explain.

(d) If instead the government restricts the market output to 10 units, calculate the deadweight loss. Show your work.

(e) Assume the price decreases from $20 to $12.
  (i) Calculate the price elasticity of demand. Show your work.
  (ii) In this price range, is demand perfectly elastic, relatively elastic, unit elastic, relatively inelastic, or perfectly inelastic?

STOP

END OF EXAM