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.

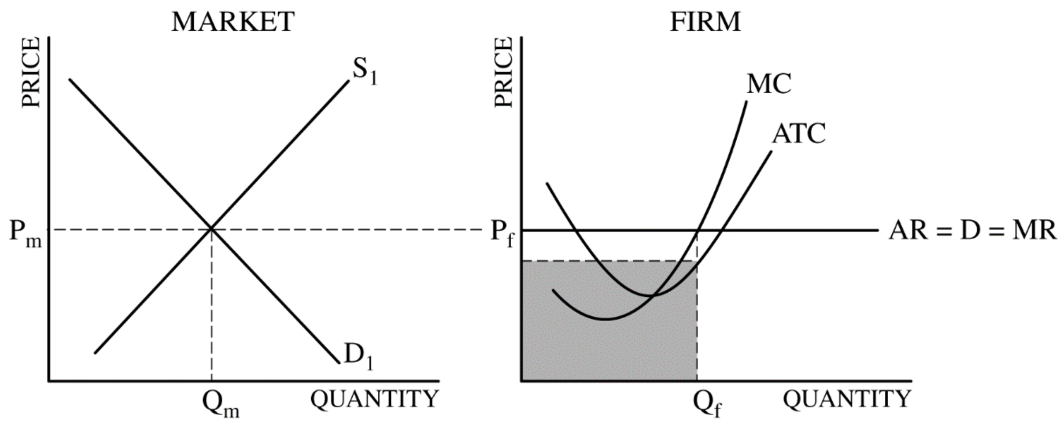
(ii) Would the profits for Breadbasket increase, decrease, or stay the same? Explain with a comparison to your answer in part (b)(i). Use the specific values.

Question 1

10 points (1+5+1+3)

(a) 1 point:

- One point is earned for stating that the firm's price is equal to the market price because the firm is a price taker.



(b) 5 points:

- One point is earned for drawing a correctly labeled graph of the market with P_m, Q_m, a downward-sloping demand curve, and an upward-sloping supply curve.
- One point is earned for identifying the firm's profit-maximizing quantity, Q_f at marginal cost (MC) equal to price or demand, or marginal revenue, or average revenue.
- One point is earned for showing the firm's average revenue curve, labeled AR, which is horizontal at the price determined by the market.
- One point is earned for showing the firm's average total cost (ATC) curve, such that the MC curve is passing through the minimum of the ATC curve, and P > ATC.
- One point is earned for showing the area representing total cost shaded completely.

(c) 1 point:

- One point is earned for stating that the firm's total revenue will fall to zero, because quantity decreases to zero, or because the firm is a price taker, or because the firm is facing a perfectly elastic demand, or the firm loses all of its customers, or the firm has no market power.

(d) 3 points:

- One point is earned for stating that the firm's quantity will remain the same in the short run and for explaining that MR or MC will not change in the short run. (Or, because the lump sum subsidy has no effect on marginal revenue and/or marginal cost, or that only fixed costs will be affected.)
- One point is earned for stating that the market price will decrease and the quantity will increase.
- One point is earned for the explanation that positive profits lead to entry of new firms that will increase the industry supply.