

3. The table below shows the total cost and total benefit of advertisements placed by AZY Foods, a firm in the retail food market.

Number of Advertisements	Total Cost (\$)	Total Benefit (\$)
1	300	1,200
2	500	2,200
3	800	3,000
4	1,300	3,600
5	2,100	4,000
6	3,000	4,200
7	4,100	4,200

- (a) Calculate the total net benefit of placing three advertisements. Show your work.
- (b) Calculate the marginal net benefit of the third advertisement. Show your work.
- (c) What is the optimal number of advertisements placed by AZY Foods? Explain using marginal analysis.
- (d) Suppose over the next year the marginal benefit that AZY Foods receives from each advertisement increases by \$300. Identify the optimal number of advertisements.
- (e) There are many firms in the retail food market. Each firm places its own firm-specific advertisements without considering the actions of its competitors. In what market structure is AZY Foods operating?

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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3. Camden’s Cakery is one of many dessert cafés serving a local community. Each café produces a slightly differentiated product, there are no barriers to entry or exit, and the firm is in long-run equilibrium.
- (a) Draw a correctly labeled graph showing Camden’s demand curve, marginal revenue curve, marginal cost curve, and long-run average total cost curve. Label Camden’s profit-maximizing output Q_m and its price P_m .
- (b) On your graph in part (a), label the output at which total revenue is maximized Q_R .
- (c) Do firms in this market experience economies of scale, diseconomies of scale, or neither in long-run equilibrium? Explain.

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