Econ_101_Spring 2007_IVY Tech College
Homework_07_Chapter_07: Solutions

1. Consider the city of Discville, where zoning laws limit the number of video arcades to one. The city's only video arcade has a price of 50 cents per game and a long-run average cost of 34 cents per game. Suppose that the city eliminates its restrictions on video arcades, allowing additional firms to enter the market. According to the expert in the arcade market, "Each additional video arcade will decrease the price of games by 2 cents and increase the average cost of providing games by 3 cents." What is the equilibrium number of video arcades?

   Calculate price and average cost for each number of firms. The equilibrium quantity is 4 firms (price is $0.44; average cost is $0.43).

2. The city of Zoneville currently uses zoning laws to restrict the number of pizzerias. Under a proposed law, the restrictions on pizzerias would be eliminated. Consider the following statement by an expert in the pizza industry. "A pizzeria reaches the horizontal portion of its long-run average-cost curve at an output of about 1,000 pizzas per day. The city's existing pizzeria sells 3,000 pizzas per day. Based on these facts, I predict that if the city eliminates the restrictions on pizzerias, we will soon have three pizzerias (3,000 pizzas divided by 1,000 pizzas per pizzeria)." If we assume that the expert's facts about production costs are correct, is the expert's conclusion (three pizzerias) correct?

   When the price falls with entry, the quantity demanded will increase; thus the total number of pizzas demanded will be greater than the current 3,000. Also, we know that the firm will be on the downward-sloping part of the average-cost curve when the zero-profit point is reached; thus, each firm must be selling less than 1,000 units. Therefore, there will be more than 3 stores in long-run equilibrium.

3. Consider the "Fixed Cost and Entry" experiment. Suppose the fixed cost per day is $18 per firm and the marginal cost is $4. Each firm can cut up to 3 lawns per day. The market demand curve is linear, with a vertical intercept of $70 and a slope of -$1 per lawn. Predict the outcome of the experiment, including the equilibrium price, quantity, and number of firms. Explain the reasoning behind your prediction.

   If each firm mows three lawns, the average cost per lawn will be $10. At a price of $10, the quantity demanded will be 60. Thus there will be 20 firms in the market.