



Math Practice

Activity 5: Maximizing Profit

Work through the following activity, considering concepts from the text.

SoDry Corporation has a monopoly on a special towel used by the manufacturing industry. Because the company president wants to increase brand recognition of these towels, he is pushing for a high level of output. The corporation's chief financial officer (CFO) must identify the price and level of output at which profits will be greatest for the product. At this level, marginal cost (cost per additional towel) will equal marginal revenue (revenue per additional towel).

The table below provides figures on decreasing prices and increasing estimated quantities demanded, or output, as well as the fixed cost and total cost associated with each estimated quantity demanded. Help SoDry's CFO perform the calculations needed to complete the identification process. Fill in the table as you complete the steps and answer the questions that follow.

Price	\$6.60	\$6.50	\$6.40	\$6.30	\$6.20	\$6.10	\$6.00
Estimated Sales	3,400	3,500	3,600	3,700	3,800	3,900	4,000
Total Revenue							
Marginal Revenue	—						
Fixed Cost	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Variable Cost	\$2,865	\$3,160	\$3,430	\$3,690	\$3,935	\$4,195	\$4,470
Total Cost							
Marginal Cost	—						
Profit							

Step 1. Calculate the total revenue generated at each price by multiplying the price by the estimated demand quantity.

Step 2. Determine the marginal revenue for the second through the seventh columns by calculating the difference between total revenue in the previous column and total revenue in the column being considered, and dividing the difference by 100 (estimated sales for each column increases by 100).

Step 3. Compute the total cost by adding fixed cost and variable cost in each column.

Step 4. Determine marginal cost for the second through the seventh columns by calculating the difference between total cost in the previous column and total cost in the column being considered, and dividing the difference by 100.

Step 5. Determine the profit by calculating the difference between the total revenue and the total cost.

1. Indicate the price, estimated sales, marginal revenue, marginal cost, and profit at maximum profit point.

2. Using the maximum profit point from question 1, what happens to profit if SoDry drops the price another 10 cents and increases output by 100 towels? _____
 To marginal cost? _____ To marginal revenue? _____