

The goal of this technology assignment is to help you complete the third and fourth steps of the proposed project strategy. In this step, you are to use the regression model you created for admissions x as a function of the price p to write the revenue as a function of the price p .

The goal of every project is to do the project algebraically and to verify those numbers with an alternate strategy. In the case of this project, you'll want to find the maximum revenue algebraically and then verify the location graphically. In this tech assignment you'll use Excel to graph your revenue function and locate its maximum graphically.

1. To graph the revenue function, you first need to find the revenue function as a function of the price p . Use the relationship

$$\text{Revenue} = \text{price} \times \text{quantity}$$

to find $R(p)$. Use this function and your knowledge of calculus to find the quantity and price at the maximum on the revenue function.

2. Based on your algebra for finding the maximum for the revenue, create a column in an Excel worksheet for p values. Place values of p appropriate to the problem that you will use to graph the revenue function. These will be the horizontal values on your graph.
3. Use your formula for $R(p)$ to create a corresponding column of values that will be the vertical values you'll graph.
4. Select your two columns and create a graph for the data by clicking on the Insert tab and selecting Scatter from the Chart panel. Choose the type Scatter with Smooth Lines.
5. Add labels to the horizontal and vertical axes that are appropriate for this application. Copy and paste the graph into a Word document.
6. Below the graph in the Word document, use Mathtype to type the function $R(p)$'s formula.
7. Add your name, date and class to the Word document. You will be graded on several items for this tech assignment:
 - a. The graph of the function $R(p)$.
 - b. An appropriate window that shows the maximum value of the function.
 - c. Appropriate labels on each axis.
 - d. The correct formula for the revenue function $R(p)$.
 - e. Overall professional appearance of the graph.
8. Make sure you save your Word and Excel documents. Attach it to the Turn In page for Tech Assignment.