Project #2 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Table of Market Research Data on Rental Demand

For Adult Bikes

|  |  |
| --- | --- |
| HourlyPrice | Number of hourly Rentals per day |
| $6.00 | 225 |
| $7.00 | 200 |
| $8.00 | 165 |
| $9.00 | 120 |

**Task 1**

Step 1: On graph paper, plot the points for adult bikes.

Step 2: Using a “line of best fit”, find the equation of the line. Pick two points that seem best. Write line in the y = mx + b form, but use the variables d = mp + b (d is for demand and p is for price)

Step 3: Plot the line on the graph paper.

**Task 2**

1. Record your equation from Task 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Use this equation to calculate the demand, d, at rental prices of $7.75 and $10.00 per day.

 At p = $7.75, d = \_\_\_\_\_\_\_\_\_\_\_

 At p = $10.00, d = \_\_\_\_\_\_\_\_\_\_

3. Use the values of d from above to find the revenue at the same prices. The equation for revenue (R) is R = price · demand, or R = p · d.

 So at p = 7.75, R = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 At p = 10.00, R = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Substitute your expression for d from 1 above into the revenue equation to create an equation for R I terms of p.

 R = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now using this equation,

 Find R(7.75) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Find R(10.00) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Task 3**

1. Copy the equation from Task 2, Step 4, here,

 R = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Find the R values using the given p values by substituting into the equation from 1 above.

|  |  |
| --- | --- |
| P |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |

3. Plot points carefully on attached graph paper 2. This is a graph of revenue with respect to price.

4. “Read” off the graph for what price will revenue , R, be maximized?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_