

## Pre-Calc Mini-Internet Project: "Yugonna to find the best deal!"

For this project, you are going to be researching the value of a used car using the Internet and exponential/ logarithmic functions. This document will be in your directory on the network so you can type in all your values into the tables and copy and paste them into your final document.

### **Part A: Finding your car**

- Using the web site: <http://www.edmunds.com/used/>, you are to select a make and model of a car that you would like to investigate.
- You must choose a car that has been manufactured for at least ten years.
- You have one class period to find your data.
- Indicate the Make and Model of your car

Make: \_\_\_\_\_ Model: \_\_\_\_\_

### **Part B: Data**

- Record the Market values in the table provided.
- Find out the value of a new/used 2000 and a new 2001 model of your car. Look for the MSRP (Manufacturer Standard Retail Price), put this in for the Dealer Retail price.

Year	Trade-In	Private Party	Dealer Retail
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			
1998			
1999			
2000			
2001			

- Save your data as a program.

### **Part C: Print the data**

- Enter the data into Graphical Analysis and make three graphs of the prices.
- Do an automatic curve fitting to get a curve through the data
- Copy and paste each graph into a word document

**Part D: What are you to do with the data**

- Find the exponential regression of the all three prices **by hand** using two points. Show all your steps on a blank sheet of paper. Find the  $\Sigma x^2$ , the residual, and the range of the residual. Enter the values into the table provided.

Prices	Equation	$\Sigma x^2$	Residual Range
Trade-In			
Private party			
Dealer Retail			

- Find the exponential regression of the data and with the **calculator**. Find the  $\Sigma x^2$ , the residual, and the range of the residual. Enter the values into the table provided.

Prices	Equation	$\Sigma x^2$	Residual Range
Trade-In			
Private party			
Dealer Retail			

- Take the log of the values of the car and plot that versus the years. Find the linear equation by hand and the linear regression using the calculator. Find the  $\Sigma x^2$ , the residual, and the range of the residual for both equations. Enter the values into the table provided.

Prices	Equation	$\Sigma x^2$	Residual Range
Trade-In (by hand)			
Trade-In (Calculator)			
Private party (by hand)			
Private party (Calculator)			
Dealer Retail (by hand)			
Dealer Retail (Calculator)			

- Make graphs of the linear equations in Graphical Analysis and copy and paste them into your document
- Change the logarithm functions into the Pert formula by hand, showing all steps.
- Write both the log and Pert formulas into the class data document in the Pre-Calc folder
- Copy and paste the tables into your document with your graphs.

### **Part E: Written Portion**

You are to write:

- An opening paragraph explaining the project
- A paragraph comparing your exponential equation to the calculator's. State whether they are similar or different and use mathematics to state why. Discuss how far apart they are and why.
- A paragraph comparing your car to all the other cars in the class using the logarithmic equations and Pert equations. Rank them as to which one is the better deal and clearly state why you ranked them as you did with a thorough and logical process using the mathematics to back up your reasoning.

### **What to turn in**

- A word processed document with your graphs, data tables, and paragraphs neatly laid out, titled and labeled
- Your calculation sheets