Write a simple R script to execute the following data preprocessing and statistical analysis. Where required show analytical output and interpretations.

**Preprocessing**

1. Load into an object the data from the "Craigs List Cars" worksheet in the "Cars list Data.xlsx" spreadsheet file. This file contains information on 46,484 vehicles in the United States listed for sale on Craig’s List. This is the master data set.
2. Using the numerical portion of the U number as a random number seed, select a random sample of n=200 autos from the master data set. This will be your primary data set.

**Analysis**

Using your primary data set:

1. Conduct a simple regression analysis using your sample data with the dependent variable being "price" and the independent variable being "odometer".
2. Give verbal interpretations of all beta coefficients in your regression model. Make certain the language you use is understandable to a reasonably competent lay person shopping for a car on Craig's List.
3. Evaluate and interpret both the p value and the confidence interval on the "odometer" coefficient in your regression model.
4. Run appropriate diagnostics on your regression model to determine if it is in conformity with the LINE assumptions of regression.
5. Ms. Trayla Parks is considering offering her Toyota for sale on Craig's List. The Toyota currently has an odometer reading of 78,521 miles. Use your regression model to predict the price of the vehicle on Craig's List. Determine and verbally interpret the appropriate confidence interval on this prediction. If Trayla kept her vehicle one more year until the odometer showed 98,000 by how much would your model predict the price of her car would change?