

**Instructions:** This quiz is to be completed entirely in class. You may not use cell phones, and you may only access internet resources you are specifically directed to use. Go to Blackboard and open the data file posted under Quiz #3. Use it to answer the following questions. **Place your answers to the bolded questions directly on this page.** You must submit the Excel file you used to perform calculations into the Quiz #3 folder in Blackboard, and submit the paper version of the quiz to the instructor to be eligible to receive full credit.

1. The data on sheet #1 represents mpg ratings for 4 different car models. Conduct an ANOVA test to determine whether all the car models have the same mpg ratings or not. Confirm your results with a comparative boxplot. **State the null and alternative hypotheses, test statistic and P-value. State the conclusion of the test.**
  
2. Considering the test scenario above, **explain the meaning of a Type I and Type II error in the context of the problem.**
  
3. The data on sheet #3 represents data for boiler maintenance hours depending on boiler capacity and pressure. Run a regression model to predict worker hours from the other two variables. Conduct a hypothesis test on the variable for pressure in this model. **State the null and alternative hypotheses, test statistic and P-value. State the conclusion of the test. What can you conclude about the predictive power of pressure on the worker hours? What would be the next step in your analysis?**