**Review for Test 3**

Topics Covered: Regression – Simple Linear and Multiple Regression

Simple Linear Regression

Be able to describe the relationship between two quantitative variables when given a scatterplot

Be able to find the r2 value using formula and the ANOVA table value on computer output and interpret this value

Be able to find the correlation coefficient using computer output and interpret this value

Be able to write the equation for a line using output

Be able to interpret the value of the slope in context of the question

Be able to construct a confidence interval for the slope

Understand the difference between r and r2

Be able to compute a predicted value using a regression equation

Be able to compute the residual for a value

Know the conditions (and how to check that they are met) for statistical inference for simple linear regression

Know that correlation does not imply causation

Multiple Regression

Be able to write the multiple regression equation using computer output

Be able to interpret a coefficient for an explanatory predictor

Be able to find the predicted value using your equation

Know the assumptions required for inference and how to check for these using computer output

Understand the difference between r2 and r2-adjusted

Know how to determine if a predictor is significant

Know how to determine if the model is significant

Be able to identify outliers using a scatterplot or a residual plot

Be able to check for multicollinearity using a correlation matrix

Using computer output and plots be able to determine which multiple regression model is best