MET CS 555 Assignment 3 – 20 points

SUBMISSION REQUIREMENTS: **Please submit a single document (word or PDF) for submission.  Your submission should contain a summary of your results (and answers to questions asked on the homework) as well as your R code used to generate your results (please append to the end of your submission). Please use R for the calculations whenever possible. You will lose points if you are not utilizing R.**

**The data in this document gives the number of meals eaten that contain fish (per week) and mercury levels in head hair for 100 fishermen.** **Save the data to a format that can be read into R. Read the data in for analysis. Use R to calculate the quantities and generate the visual summaries requested below.**

1. To get a sense of the data, generate a scatterplot (using an appropriate window, label the axes, and title the graph). Consciously decide which variable should be on the x-axis and which should be on the y-axis. Using the scatterplot, describe the form, direction, and strength of the association between the variables. **(4 points)**
2. Calculate the correlation coefficient. What does the correlation tell us? **(2 points)**
3. Find the equation of the least squares regression equation and write out the equation. Add the regression line to the scatterplot you generated above.  **(2 points)**
4. What is the estimate of ? How can we interpret this value? What is the estimate of ? What is the interpretation of this value? For the interpretations, you should be interpreting them in the context of this specific data set. **(4 points)**

(5) Calculate the ANOVA table **AND** the table which gives the standard error of . Formally test the hypothesis that = 0 using either the F-test or the t-test at the level. Either way, present your results using the 5-step procedure described in the course notes.

Within your conclusion, calculate the R-squared value and interpret this. Also, calculate (using R) and interpret the 90% confidence interval for . **(8 points)**