Homework 4

Before you start, please read the following two requirements thoroughly:

(1)For all problems in this homework, the chosen significance level is 0.05, i.e. if your p-value is less than 0.05, please reject the null hypothesis.

(2) This homework is about hypothesis testing. when you answer any question with question mark in this homework, please answer them in the framework of hypothesis testing. First set up your **null and alternative hypothesis**, with respect to the question you try to answer. Then choose **proper testing procedure** and then **report relevant information to make your decision on statistical testing problem**. Please don't provide everything from your SAS output, only relevant information matters.

Problem 1. The file Utility.dat contains a monthly record of telephone, electricity, and fuel costs for several years. Naming the 5 columns as Month ,Year, Telephone, Electricity and Fuel, respectively.

(a) Import the data set into SAS using the INFILE statement.

(b)Is the true average monthly phone cost higher than $50 per month?

Problem 2. The file Handinj.dat contains the costs (in Irish pounds) and lost work days due to hand injuries for workers in

Dublin, Ireland. Naming the four columns as ID,Type, Days and Cost, respectively;

(a) Import the data set into SAS using the INFILE statement.

(b)Is the average number of Days different for two levels of Type:work and sports?

Problem 3. The file Wine.dat contains data collected by a student to assess whether or not temperature and brand affected the taste of wine.Naming the four columns as Brand, Temperature, Replicate and Rating, respectively;

(a) Import the data set into SAS using the INFILE statement.
(b). Do the average Rating differ for Brand?

Problem4. The file Wear.dat contains data about the wear on a saw blade for different cut depths and grit sizes. Naming the three columns as gritsize, cutdepth and wear, respectively; Note that gritsize is a **alphanumeric** variable, rather than numeric variable.

(a) Import data set into SAS using the INFILE statement.
(b) Does wear depend on cutdepth or gritsize? Include an interaction term in your analysis.
(c)Check the model assumptions.