AMS 394 Homework 8 SAS

Question 1

Over then past 5 years, the mean time for a warehouse to fill a buyer's order has been 25 minutes. Officials of the company believe that the length of time has increased recently, either due to a change in the workforce or due to a change in customer purchasing policies. The processing time (in minutes) was recorded for a random sample of 15 orders processed over the past month.

28 25 27 31 10 26 30 15 55 12 24 32 28 42 38

(a). Please check the normality of the data.

(b). Please test the research hypothesis at the significance level $\alpha = 0.05$.

Question 2

In an effort to link cold environments with hypertension in humans, a preliminary experiment was conducted to investigate the effect of cold on hypertension in rats. Two random samples of 6 rats each were exposed to different environments. One sample of rats were held in a normal environment at 26°C. The other sample was held in a cold 5°C environment. Blood pressures and heart rates were measured for rats for both groups. The blood pressure for the 12 rats are shown in the accompanying table. Do the data provide sufficient evidence to indicate that rats exposed to a 5°C environment have a higher mean blood pressure than rats exposed to a 26°C environment? Test by using $\alpha = .05$.

26°C	
Rat	Blood Pressure
1	152
2	157
3	179
4	182
5	176
6	149

5°C	
Rat	Blood Pressure
7	384
8	369
9	354
10	375
11	366
12	423

Question 3

An agricultural experiment station was interested in comparing the yields for two new varieties of corn. Because the investigators thought that there might be a great deal of variability in yield from one field to another, each variety was randomly assigned to a different 1-acre plot on each of seven farms. The 1-acre plots were planted; the corn was harvested at maturity. The results of the experiment (in bushels of corn) are listed here. Use these data to test the null hypothesis that there is no difference in mean yields for the two varieties of corn. Use $\alpha = .05$.

Farm	1	2	3	4	5	6	7
Variety A	48.2	44.6	49.7	40.5	54.6	47.1	51.4
Variety B	41.5	40.1	44.0	41.2	49.8	41.7	46.8

Question 4

A company wanted to know if attending a course on “how to be a successful salesperson” can increase the average sales of its employees. The company sent six of its salesperson to attend this course. The following table gives the one-week sales of these salespersons before and after they attended the course.

Before	12	18	25	9	14	16
After	18	24	24	14	19	20

Using the 1% significance level, can you conclude that the mean weekly sales for all salespersons increase as a result of attending this course?