STAT 8250 — Applied Multivariate Analysis
Homework 3 – Due Wednesday, Oct. 11

Homework Guidelines:

- Homework is due by 4:30 on the due date specified above. You ma y turn it in at the beginning of class or place it in my mailbox in the Statisti cs Building. **No late homeworks will be accepted!**
- Use only standard (8.5×11 inch) paper and use only one side of each sheet.
- Homework should show enough detail so that the reader can clear ly understand the procedures of the solutions.
- Problems should appear in the order that they were assigned.
- If you use a computer to obtain your results, append both the computer program and the associated output to your homework. Label all appended sheets clearly and in your answer refer specifically to appended results when relevant. For example, "The correlation matrix is

$$\begin{pmatrix} 1.00 & 0.53 \\ 0.53 & 1.00 \end{pmatrix}$$

(see p.3 of attached output labelled 'hwk1_3a.lst')."

Assignment:

From the text do the following problems:

5.1, 5.4, 5.5, 5.7, 5.9, 5.19, 6.3

In addition do the following problem:

For the cork data, test the hypothesis that the four measurements of cork weight are independent. That is, test $\mathbf{P} = \mathbf{I}$ as described in class. Use a significance level of 0.05 and state your conclusion. You may assume here that the sample size is "large enough" to use the rejection rule given in class.

Comments, hints, advice:

1. Data for these problems have been put on the statlab network and they are also included on the data disk in the back of your book. The files are T1-6.dat, and T6-1.dat corresponding to the data in tables 1.6 and 6.1, respectively. The cork data and sweat data should already be available. Other data can be entered by hand. You may use the computer (SAS) for as much of the assignment as you wish.

2. Regarding 5.9b: Use result 5.3 in the text to obtain CIs for μ_1 and μ_2.