MATH 204 - ASSIGNMENT 1

Please Hand in Assignment in the Lecture on Friday 26th January.

A standard model of memory is that the degree to which the subject remembers verbal material is a function of the degree to which it was processed when it was initially presented.

Reference: Craik, F. I. M. and Lockhart, R. S. (1972). Levels of Processing: a framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, 11, 671-684.

Experiment: Fifty subjects aged between 55 and 65 years were randomly assigned to one of five groups which carried out different memory tasks. The five groups included

- The **Counting** group was asked to read through a list of words and simply count the number of letters in each word.
- The **Rhyming** group was asked to read each word and think of a word that rhymed with it.
- The **Adjective** group had to process the words to the extent of giving an adjective that could reasonably be used to modify each word on the list.
- The **Imagery** group was instructed to try to form vivid images of each word.
- The **Intentional** group was told to read through the list and to memorize the words for later recall.

After subjects had gone through the list of 27 items three times, they were given a sheet of paper and asked to write down all the words they could remember. The response data were the number of words recalled by each individual in each group, and are presented below:

Counting	Rhyming	Adjective	Imagery	Intentional
9	7	11	12	10
8	9	13	11	19
6	6	8	16	14
8	6	6	11	5
10	6	14	9	10
4	11	11	23	11
6	6	13	12	14
5	3	13	10	15
7	8	10	19	11
7	7	11	11	11

These data may be downloaded

- in plain text format from

    http://www.math.mcgill.ca/~dstephens/204/Data/MemoryTask.txt

- in SPSS format from

    http://www.math.mcgill.ca/~dstephens/204/Data/MemoryTask.sav

Research question: Does the level of processing required when material is processed affect how much material is remembered ?

Test a hypothesis to answer this question using an ANOVA F-test. Specifically

(a) Form the ANOVA table, and report the result of the ANOVA F-test.

15 Marks

(b) Discuss whether the assumptions of behind the ANOVA F-test hold for this example.

5 Marks

You may use SPSS, and the output generated, provided that you write comments pointing out the key results. For (a), you MUST present the ANOVA table in the form described in lectures.