12.95 An investor has consulted four different financial advisors with regard to the expected annual rate of return for each of three portfolio possibilities she is considering. The financial advisors have been chosen because they are known to range from very conservative (advisor A) to very optimistic (advisor D). The advisors respective estimates for the three portfolios are shown here. Use the 0.05 level in comparing the portfolios. (Use data file XR12095.).

Estimated Annual Rate of Return (in %)

	Portfolio		
Advisor	1	2	3
A	8	8	5
B	12	10	8
C	8	11	10
D	15	12	11

12.96 Researchers have obtained and tested samples of four different brands of nylon rope that are advertised as having a breaking strength of 100 pounds. Given the breaking strengths (in pounds) shown here, use the 0.025 level in comparing the brands. (Use data file XR12096.)

Brand A	Brand B	Brand C	Brand D
103.1	111.6	109.0	118.0
108.9	117.8	111.8	115.8
106.7	109.8	113.0	114.2
114.3	110.1	109.7	117.3
113.3	118.3	108.6	113.8
110.5	116.7	114.7	110.6

12.99 A magazine publisher is studying the influence of type style and darkness on the readability of her publication. Each of 12 persons has been randomly assigned to one of the cells in the experiment, and the data are the number of seconds each person requires to read a brief test item. For these data, use the 0.05 level of significance in drawing conclusions about the main and interactive effects in the experiment. (Use data file XR12099.)

	Type Darkness		
Type Style	Light	Medium	Dark
1	29	23	26
	32	28	30
2	29	26	23
	31	23	24

Problem: A plant biologist conducted an experiment to compare the yields of 4 varieties of peanuts (A, B, C, D). A plot of land was divided into 16 subplots (4 rows and 4 columns) The following Latin square design was run. The responses are given in the table to the right. Use a Latin Square analysis of the above data and test the whether the peanut varieties are different or not at 5% level.

Treatment (peanut variety)

	Column			
Row	E	EC	WC	W
N	C	A	B	D
NC	A	B	D	C
SC	B	D	C	A
S	D	C	A	B

Response (yield)

	Column			
Row	E	EC	WC	W
N	26.7	19.7	29.0	29.8
NC	23.1	21.7	24.9	29.0
SC	29.3	20.1	29.0	27.3
S	25.1	17.4	28.7	35.1