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LIS 397.1

INTRODUCTION TO RESEARCH IN
 LIBRARY AND INFORMATION SCIENCE

1998 July 2
 Wyllys

TAKE-HOME MIDTERM

The following problems are keyed to Part 3 of the In-Class Midterm, to which you will need to refer for descriptions of the situations.

Please note that, as is explained in the course outline, you are expected to work these problems by yourself. That means you are expected to work them without aid from other students, from the Teaching Assistant for the course, or from the staff of the Information Technology Laboratory. Because I recognize that I may, unintentionally, fail to state problems unambiguously, you should feel free to ask me any questions you wish (but I reserve the right not to answer them fully).

(25 points each)

A. Enlisting the aid of your principal's secretary (to whom you frequently pass along tips about good new detective stories), you gain access to the scores of a random sample of 60 of your school's students on the Hog-Heaven Test of Basic Skills. You then examine your library's records of the number of items of learning-resources materials checked out by these students between the start of the school year and the date of the HHTBS. Here are your data:

Composite		Composite		Composite			
Number	Score on	Number	Score on	Number	Score on		
of Items	HHTBS	of Items	HHTBS	of Items	HHTBS		
23	85	3	54	17	85		
25	81	16	79	14	69		
38	97	4	43	28	94		
6	39	19	73	32	98		
33	89	14	57	16	48		
14	72	32	91	11	66		
4	52	0	17	22	89		
16	64	10	83	7	53		
24	93	13	59	15	81		
15	59	15	65	17	81		
3	25	2	27	28	69		
20	84	8	31	15	62		
8	67	15	90	17	89		
11	61	31	99	44	94		
12	45	1	36	12	78		

29	71	20	66	4	40
0	12	40	97	5	37
32	85	8	33	37	88
20	49	30	83	26	79
13	70	9	58	0	39

What can you conclude from these data?

B. You decide that it is reasonable to treat the selections unearthed in your search of the last two years' worth of such selections as a random sample of all possible such selections. When you examine your data according to the level of pollution violations associated with the companies making the selections, and according to the rating of the quality of the public libraries in the various cities, you find yourself able to construct the following table:

NUMBERS OF CITY SELECTIONS CATEGORIZED BY
COMPANY'S POLLUTION RECORD AND QUALITY OF CITY'S PUBLIC LIBRARY

Quality of Public Library	Level of Pollution of the Company		
	Low	Medium	High
Mediocre	6	12	14
Average	9	13	11
High	23	15	5

What can you conclude?

C. You and your fellow alum gather data on the numbers of repairs required each month during the past year by the two types of machines. In order to make the comparison as accurate as possible, you express the repair frequency in terms of the proportion of each system's total number of computers that required repairs during the month. Here are your data:

MONTHLY REPAIRS PER COMPUTER BY BRAND OF COMPUTER		
Bell	Packemin	
	.0153	.0108
	.0860	.0196
	.0106	.0129
	.0358	.0912
	.0412	.0155
	.0853	.0103
	.0745	.0079
	.0837	.0129
	.0577	.0584
	.0349	.0216
	.0358	.0860
	.0631	.0618

What can you conclude?

D. Since your initial comparison of repair frequencies by brand 18 months ago, you and your fellow alum have continued to accumulate data on the proportion of each system's computers that need repair. Now you look at the entire set of data to see whether there is any evidence of a trend over time in the frequency with which repairs are needed. Here are the data for the latest 18 months:

MONTHLY REPAIRS PER COMPUTER BY BRAND OF COMPUTER		
Bell	Packemin	
	.0765	.0679
	.0723	.0515
	.0901	.0772
	.0404	.0647

.0745	.0545
.0712	.0941
.0851	.0761
.0862	.0503
.0853	.0610
.0759	.0723
.0811	.0874
.0923	.0725
.1287	.1255
.1364	.0930
.1782	.1047
.1504	.1185
.1976	.1410
.1521	.1507

Using the entire set of 30 months of data, what can you conclude about the trend, if any, over time in the frequency of repairs required by each brand of computer?