

**Stats practice exam 4 - answers**

1. Below is data concerning number of driving errors for legally intoxicated drivers (alcohol) and those with no alcohol in their system (control). Is there a relationship between intoxication and driving performance? Test at alpha = .05.

<b>alcohol</b>	<b>control</b>
9	4
7	7
6	3
10	6

**answer** this data should be reconfigured so as to conduct a point-biserial correlation.

<b>condition</b>	<b>errors</b>
1	9
1	7
1	6
1	10
0	4
0	7
0	3
0	6

SP = 6; SSx = 2; SSy = 38, r (6) = .69, p > .05.

2. Two supervisors evaluating employee performance categorize each employee's performance as: (1) excellent, (2) good, (3) average, or (4) poor. Compute percentage of agreement and Cohen's Kappa.

		<b>supervisor A</b>			
		excellent	good	average	poor
<b>super B</b>	excellent	45 (23.375)	5	0	5
	good	25	35 (21.25)	5	20
	average	10	5	15 (3)	0
	poor	5	5	0	20 (6.75)

% agreement = 45 + 35 + 15 + 20 divided by 200 = .575.

Kappa = 115 - 54.375 / 200 - 54.375 = .42.

3. The following data is from an experiment examining two drug treatments on pain ratings (higher the rating, the greater the pain). Is there a relation between treatment and pain rating? Based on your biserial correlation, would you expect an independent samples t-test to uncover differences between the two groups? Why or why not?

<b>treatment 1</b>	<b>treatment 2</b>
10	11
2	5
1	2
15	18
7	9

**point biserial**— $SP = -5$ ;  $SSx = 2.5$ ;  $SSy = 294$   $r(8) = -.18$ ,  $p > .05$ .

Because  $r$  was not significant, we would not expect a t-test to reveal significant differences between the groups.

4. Two faculty on the graduate admissions committee are compared to determine if there is a high level of agreement concerning whether applicants are acceptable for graduate school. Compute the percentage of agreement and Cohen's Kappa on the data below.

		<b>faculty A</b>	
		accept	reject
<b>faculty B</b>	accept	20 (12)	40
	reject	10	80 (72)

% agreement =  $100/150 = .67$  or 67%

Kappa =  $100 - 84$  divided by  $150 - 84 = 16/66 = .24$ .