

Student ID# _____
(You must use your actual student ID #)

Final Exam

PS 306, Fall 2000

Well, here it is...the last exam that you'll take in this course. I trust that you come to the exam well prepared. The exam should contain relatively few surprises for you. Be sure to comment on any design flaws that you spot as you go through the exam. To ensure that you get as much credit as possible, show all your work. The exam totals 120 points, so it may only take you two hours to complete. ☺ Good luck and may you have a pleasant break.

Peace,

1. As clearly and carefully as you can, articulate the difficulties of removing deception by means of a debriefing. What is a process debriefing and what is the evidence that process debriefing may be useful in removing the effects of deception? [10 pts]

2. Participants were asked to take multiple-choice tests under each of three different conditions of crowding. In one condition (alone), the participant worked alone at a table. In another (three other participants) the same person was at the same table with three other individuals, all working at the same task. In the third condition (seven other participants), seven other people were also at the table, all working on the same task. The dependent variable was the number of items answered correctly out of a total of 60 questions. Does crowding have an effect on the number of items answered correctly? Complete the source table below and interpret the results of the study as completely as possible. [15 pts]

ANOVA Table for Number of others

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Subject		860.					
Category for Number of others		1500.			<.0001	39.735	1.000
Category for Number of others * Subject		1057.					

Means Table for Number of others

Effect: Category for Number of others

	Count	Mean	Std. Dev.	Std. Err.
Alone	15	34.600	8.601	2.221
Three Others	15	28.067	6.088	1.572
Seven Others	15	20.467	5.097	1.316

3. The following data represent the salaries *and* benefits (total compensations) for United Way executives in 10 cities with the highest compensations for one year during the early 1990s. Also included are the per-capita contributions to the United Way in each of those cities. Is there a relationship between the compensation received by these 10 best paid executives and the amount of contributions raised from their constituents? Suppose that an executive were paid \$200,000 in total compensation. What would expect that chapter of United Way to receive in per-capita contributions? Suppose that an executive were paid \$300,000 in total compensation. What would you expect that chapter to United Way to receive in per-capita contributions? [15 pts]

Regression Summary

Contributions vs. Executive Compensation

Count	10
Num. Missing	0
R	.633
R Squared	.401
Adjusted R Squared	.326
RMS Residual	5.347

ANOVA Table

Contributions vs. Executive Compensation

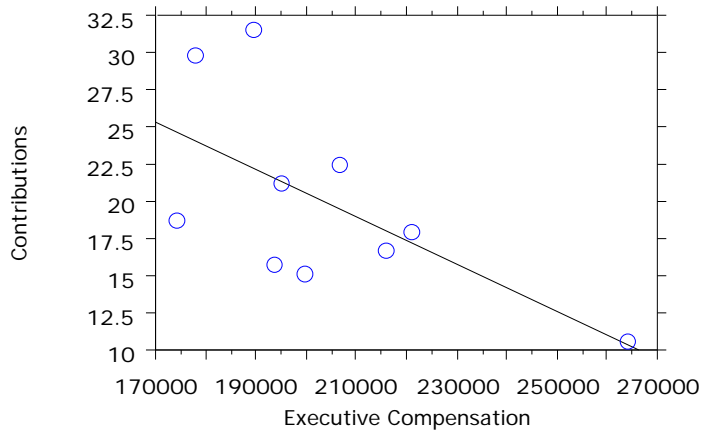
	DF	Sum of Squares	Mean Square	F-Value	P-Value
Regression	1	153.192	153.192	5.357	.0493
Residual	8	228.755	28.594		
Total	9	381.946			

Regression Coefficients

Contributions vs. Executive Compensation

	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
Intercept	52.505	14.147	52.505	3.711	.0059
Executive Compensation	-1.596E-4	6.893E-5	-.633	-2.315	.0493

Regression Plot



$Y = 52.505 - 1.596E-4 * X; R^2 = .401$

4. An educational psychologist was interested in testing the effectiveness of two different means of teaching reading (phonics vs. sight methods) at three different age grades (Kindergarten, First, and Second Grades). To that end, classes of 20 students from each grade level were selected and 10 were assigned to learn to read by the Phonics method and 10 were assigned to learn to read by the Sight method. Complete the course table below and interpret the results of this study as completely as you can. [20 pts]

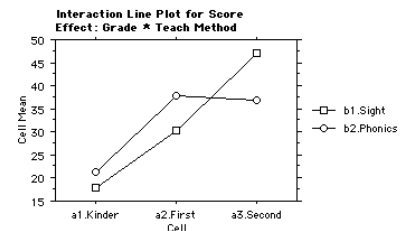
ANOVA Table for Score

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Grade		5113.7			<.0001	435.006	1.000
Teach Method		1.6			.7080	.142	.065
Grade * Teach Method		872.1			<.0001	74.189	1.000
Residual		634.8					

Means Table for Score

Effect: Grade * Teach Method

	Count	Mean	Std. Dev.	Std. Err.
a1.Kinder, b1.Sight	10	17.800	3.521	1.114
a1.Kinder, b2.Phonics	10	21.400	3.471	1.097
a2.First, b1.Sight	10	30.200	3.490	1.104
a2.First, b2.Phonics	10	37.800	3.490	1.104
a3.Second, b1.Sight	10	47.000	3.091	.978
a3.Second, b2.Phonics	10	36.800	3.490	1.104



5. During the penultimate (next-to-last) class meeting, you broke into groups to discuss the ethics of three particular studies. Using only one of the *specific studies* that your group discussed that day, tell me here how you responded to that particular study. If you thought it was unethical, tell me why. If you thought that the study was ethical, tell me why. [10 pts]

6. In the Fine & Kurdek (1993) article, the authors use four different hypothetical cases to make the point that determining authorship in faculty-student collaborative research projects is often complex. They outline a number of principles that they think should guide such decisions. Briefly describe those principles, then briefly describe some recommendations for determining authorship that emerge from those principles. Then, consider the following scenario. Suppose that you completed a senior thesis under the supervision of one of the faculty in our department. Suppose that your thesis work later was incorporated in an article written by the faculty person, along with several other studies. Using the principles and recommendations articulated by Fine & Kurdek, tell me the conditions under which you think that your contribution to the paper should be acknowledged with authorship. [15 pts]

7. The state superintendent of instruction asks the director of educational research to investigate differences in scores on a standardized teacher examination for senior education students majoring in the following subject areas: English, Mathematics, Physical Education, and Vocational Education. The following results are from a random sample of 32 graduating seniors (16 males and 16 females). Complete the source table and interpret the results as completely as you can. [15 pts]

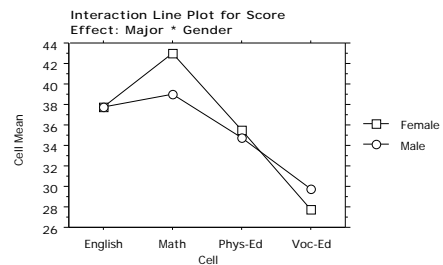
ANOVA Table for Score

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Major		647.34			<.0001	63.478	1.000
Gender		3.78			.5483	.371	.088
Major * Gender		37.34			.3238	3.662	.278
Residual		244.75					

Means Table for Score

Effect: Major * Gender

	Count	Mean	Std. Dev.	Std. Err.
English, Female	4	37.750	1.708	.854
English, Male	4	37.750	2.630	1.315
Math, Female	4	43.000	5.598	2.799
Math, Male	4	39.000	5.292	2.646
Phys-Ed, Female	4	35.500	2.082	1.041
Phys-Ed, Male	4	34.750	.957	.479
Voc-Ed, Female	4	27.750	1.708	.854
Voc-Ed, Male	4	29.750	2.062	1.031



8. Suppose that you were interested in the extent to which participants like particular color combinations. You first create 9 different color combinations (e.g., mauve-chartreuse). You are also interested in the extent to which lighting conditions will influence the judgments, so you also have three different lighting conditions (incandescent light, fluorescent light, sunlight). Thus, you are using a two-factor design (9x3). Your dependent variable is the participant's rating on a 9-point scale (1=yuck, 9=yum). Suppose, further, that you expect that (for reasons of power) you need to have about 30 scores in each of your cells. [15 pts]

a. If you ran this study as a completely between (independent groups) design, how many total participants would you need?

b. If you ran this study as a completely within (repeated measures) design, how many total participants would you need?

c. If you ran this study as a mixed design, with the three different lighting conditions as the between (independent groups) factor and the nine different color combinations as the within (repeated measures) factor, how many total participants would you need?

d. Which design would you choose to use? Why?

9. Throughout the semester, we've talked about power. Define power, then label where power occurs in the figure below. While you're at it, label where Type I and Type II errors are to be found as well. [5 pts]

