Student ID# _____ Final Exam PS 306, Fall 2005
(You must use your actual student ID #)

As always, the Skidmore Honor Code is in effect, and you'll write and sign some version of the code at the end of the exam. 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 110 points, so it may take you roughly 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. Then, using the studies discussed in the Ross et al. paper, describe the *evidence* that process debriefing may be useful in removing the effects of deception? [10 pts]

2. Dr. I. P. Freeley was interested in replicating the Middlemist et al. study, but using a repeated measures design for greater power. For several days, he had a rotating cadre of confederates (so that the students wouldn't think that someone was stalking them) follow a set of students enrolled in an introductory psychology class. Whenever one of these students would enter a restroom to urinate, a confederate would check to ensure that no one else was using a urinal. If the participant were alone at one of the urinals, the confederate would either: 1) go to the urinal immediately next to the student (Near Stall); 2) go to a urinal one urinal away from the student (Distant Stall); or would simply go to the mirror and comb his hair (Alone). The dependent variable, as in the Middlemist study, was the time (in minutes) between when the unwitting participant unzipped his pants and when he began to micturate. Complete the source table below and interpret these data as completely as you can. [10 pts]

ANOVA Table for Distance

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Subject			.13				
Category for Distance				111.2	<.0001	222.433	1.000
Category for Distance * Subject			.01				

Means Table for Distance
Effect: Category for Distance

	Count	Mean	Std. Dev.	Std. Err.
Alone	10	.550	.227	.072
Distant Stall	10	.560	.196	.062
Near Stall	10	1.140	.259	.082

3. Correlational designs do not allow you to make casual claims. Why not? Be very explicit about the difficulty of claiming that changes in one of the two variables in a correlational study *causes* the related changes observed in the second variable. We also discussed the shortcomings of using non-manipulated characteristics of the participants as "independent variables" in an experiment. How is this class of variable related to the notion of correlational designs? [10 pts]

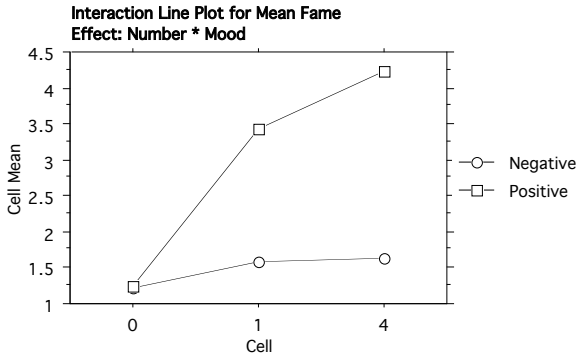
4. Kitamura (2005) was interested in the impact of mood on cognitive processes. Kitamura thought that a positive mood leads to more automatic processing than a negative mood, which leads to more controlled processing. In one study, half of the participants were placed in a positive mood and half in a negative mood (using a mood induction technique). Then they were all given a list of non-famous companies either once or four times. Two days later they were asked to judge the fame of a list of companies, including ones that had been seen previously. Let's pretend that the participants rated fame on a 7-point Likert-type scale (1 = "not famous" and 7 = " famous"). Suppose that the data had produced the results seen below. Complete the analysis and interpret the results, including a brief discussion (as you might find in a Discussion section). [20 pts]

ANOVA Table for Mean Fame

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Number		38.1			<.0001	100.337	1.000
Mood		39.9			<.0001	105.055	1.000
Number * Mood		21.0			<.0001	55.320	1.000
Residual		25.0					

Means Table for Mean Fame
Effect: Number * Mood

	Count	Mean	Std. Dev.	Std. Err.
0, Negative	12	1.208	.178	.051
0, Positive	12	1.233	.183	.053
1, Negative	12	1.583	.327	.094
1, Positive	12	3.425	.748	.216
4, Negative	12	1.633	.487	.141
4, Positive	12	4.233	1.144	.330



5. While discussing ethics in research involving human participants, 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 used the APA guidelines to respond 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. [10 pts]

7. Dr. Ryan Deere is interested in studying the impact of alcohol consumption and sleep deprivation on driving behavior. Thus, he decides to use a two-factor independent groups design to address these issues. He uses three levels of alcohol consumption (in ounces): 1, 2, and 3 ozs. He also uses four levels of sleep deprivation: 24, 48, 72, and 96 hours. The dependent variable is the number of errors made on a driving simulator. Before taking the driving test, a participant is asked to go without sleep for one of the four times specified (e. g., 48 hours), then asked to drink a glass of orange juice laced with one of the three amounts of vodka (e.g., 3 ozs.). The number of errors made in the course of the test is recorded, then the participant is debriefed and excused. Complete the source table below and interpret the results of this study as completely as you can. [15 pts]

ANOVA Table for Errors

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Amt Alcohol				233.19	<.0001	466.387	1.000
Sleep Dep				139.58	<.0001	418.755	1.000
Amt Alcohol * Sleep Dep				1.91	.1058	11.462	.624
Residual							

Means Table for Errors
Effect: Amt Alcohol * Sleep Dep

	Count	Mean	Std. Dev.	Std. Err.
1, 24	4	4.000	.816	.408
1, 48	4	6.750	1.258	.629
1, 72	4	9.000	.816	.408
1, 96	4	12.250	1.708	.854
2, 24	4	7.500	1.291	.645
2, 48	4	9.500	1.000	.500
2, 72	4	12.750	.957	.479
2, 96	4	16.500	1.291	.645
3, 24	4	11.500	1.291	.645
3, 48	4	15.000	1.414	.707
3, 72	4	19.250	.957	.479
3, 96	4	23.000	1.414	.707

8. Dr. Gus Tatory is interested in the extent to which participants like particular combinations of color and food. He first creates 7 different combinations (e.g., green eggs, pink mashed potatoes, etc.). He is also interested in the extent to which the accompanying beverage will influence the judgments, so he also has five different drinks (water, cola, beer, tea, and hot chocolate). Thus, Gus is using a two-factor design (7x5). His dependent variable is the participant's rating of the food on a 9-point scale (1=yuck, 9=yum). Suppose, further, that (for reasons of power) he expects to have at least 30 scores in each of the cells. [15 pts]

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

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

c. If he ran this study as a mixed design, with the five different beverages as the between (independent groups) factor and the seven different food/color combinations as the within (repeated measures) factor, how many total participants would he need?

d. If it were up to you, which design would you choose to use? Why?

9. Two researchers were interested in studying the effects of reward magnitude on performance. Both researchers used introductory psychology students as participants, the same total number of participants (21), the same type of reward and reward magnitudes ($1, $5, $20), the same apparatus, the same task, and the same performance measure (DV). One researcher used an independent groups design and, on the basis of the results, cannot reject the null hypothesis (that reward has no effect on performance). The other researcher uses a repeated measures design and finds a statistically significant effect of reward magnitude — larger rewards lead to better performance. Assume that neither study has a major flaw (e.g., repeated measures design is properly counterbalanced, random assignment to conditions). There are two fundamental reasons why the two researchers might have reached different conclusions. One reason concerns the sensitivity of the test of the null hypothesis. The other reason concerns the nature of the participant's experience in the two studies (what you might think of as the demand characteristics). Provide me with a clear explanation of the two reasons for the different results that the two researchers obtained. Would you trust the results of one study more than the other? Why? Finally, complete the source tables for the two experimenters seen below. [15 pts]

Independent Groups Design (F_{Crit} = 3.55):

Source	df	SS	MS	F
Treatment		28		
Error				
Total		100		

Repeated Measures Design (F_{Crit} = 3.23):

Source	df	SS	MS	F
Subject		100		
Treatment		20		
Error (Subj x Treat)				
Total		200		