ID# _____ Final Exam PS 217, Spring 2003

As always, the Skidmore Honor Code is in effect. Except for its length and comprehensive nature, you should think of this exam as similar to the first two exams. That is, you should read each question carefully and answer it completely. You should show all your work. And you should think of a point as a minute, so you should be able to complete a 10-point question in about 10 minutes. Of course, you have the entire 3 hours for this exam. Good Luck! And have a wonderful summer!

1. Faces appear to be interesting stimuli to children (e.g., Fantz, 1961). To test that hypothesis, suppose that one of three different kinds of stimuli were presented to children of four different ages (1, 2, 3, and 4 months of age). The three different ovoids (seen below) were filled with face-like features (Face), filled with the same features in a scrambled fashion (Scrambled Face), or filled with an equivalent amount of black ink at the top of the ovoid (No Face). First of all, tell me why these particular stimuli were chosen. [2 pts]

The DV is the amount of time (in seconds) that the children spend looking at the stimuli in a 2-min test. Complete the source table below and interpret the results of this study as completely as you can. [18 pts]

ANOVA Table for Looking Time

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Age		286.0			<.0001	141.851	1.000
Type of Face		7349.0			<.0001	3644.149	1.000
Age * Type of Face				59.9	<.0001	359.421	1.000
Residual			2.0				

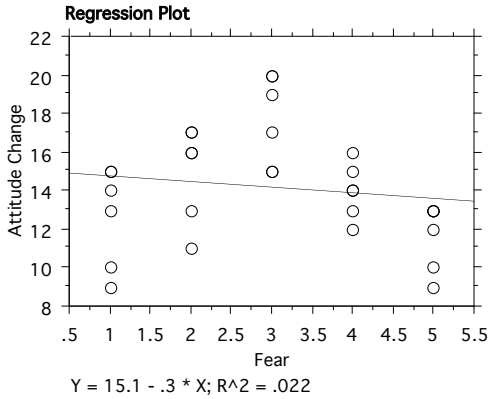
Means Table for Looking Time
Effect: Age * Type of Face

	Count	Mean	Std. Dev.	Std. Err.
1 mo., Face	5	38.000	1.581	.707
1 mo., No Face	5	20.800	1.924	.860
1 mo., Scram Face	5	33.000	1.581	.707
2 mo., Face	5	42.400	2.074	.927
2 mo., No Face	5	20.800	1.483	.663
2 mo., Scram Face	5	38.200	1.304	.583
3 mo., Face	5	50.400	1.673	.748
3 mo., No Face	5	17.600	.894	.400
3 mo., Scram Face	5	42.200	.837	.374
4 mo., Face	5	41.600	1.140	.510
4 mo., No Face	5	13.000	1.000	.447
4 mo., Scram Face	5	44.800	.837	.374

2. Some researchers, such as McGuire (1968), have studied the relationship between the amount of fear invoked in a persuasive message and the extent of attitude change. Suppose that you observed a set of results such as those seen below. Interpret the results as completely as you can. If a person had a Fear Score of 3, what would be your best estimate of that person's Attitude Change score? [5 pts]

Regression Summary
Attitude Change vs. Fear

Count	30
Num. Missing	0
R	.149
R Squared	.022
Adjusted R Squared	•
RMS Residual	2.924



ANOVA Table
Attitude Change vs. Fear

	DF	Sum of Squares	Mean Square	F-Value	P-Value
Regression	1	5.400	5.400	.632	.4335
Residual	28	239.400	8.550		
Total	29	244.800			

Regression Coefficients
Attitude Change vs. Fear

	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
Intercept	15.100	1.252	15.100	12.061	<.0001
Fear	-.300	.377	-.149	-.795	.4335

3. In an attempt to determine the extent to which fear is an important tool in persuasive messages, Janis and Feshbach (1953) assigned high school students to one of four groups. The message was concerned with dental hygiene and degree of fear arousal was manipulated by the number and nature of consequences of improper care of teeth which were referred to (and shown in color slides); each message also contained factual messages about the causes of tooth decay and some advice about caring for teeth.

The *high fear* condition made 71 references to unpleasant effects, including toothache, painful treatment, and possible secondary diseases, including blindness and cancer; the *moderate fear* condition made 49 references and the *low fear* condition just 18. (Control participants heard a talk about the eye.)

After one week, the effectiveness of the persuasive communications was examined. Suppose that the DV was the extent to which the participants adopted better dental care behaviors (1 = adopted few, 10 = adopted many). Complete the source table below and interpret the results of this study. [15 pts]

ANOVA Table for Behav Adopted

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Fear Condition				191.7	<.0001	575.156	1.000
Residual							

Means Table for Behav Adopted
Effect: Fear Condition

	Count	Mean	Std. Dev.	Std. Err.
Control	20	2.150	.813	.182
High	20	2.800	1.056	.236
Low	20	5.850	.933	.209
Moderate	20	8.450	.945	.211

4. Dr. Alphonse Dente studies taste perception. In a recent study, he was interested in studying the impact of amount of salt added to a tomato sauce on ratings of the quality of the gustatory experience. He used three levels of salt (1 tablespoon per quart, 2 tablespoons per quart, and 3 tablespoons per quart). Other than the level of salt, the composition of the tomato sauce was identical. An equal amount of one sauce with one of the three salt levels was poured over spaghetti and served to each participant. Because Dr. Dente thought that the accompanying beverage might have an impact on the ratings of the food quality, one third of the participants for each level of salt consumed a beer along with their spaghetti, one third of the participants consumed a glass of wine, and one third of the participants consumed a glass of water. The dependent variable was a rating by each participant of the overall quality of the spaghetti using a 9-pt rating scale (1 = not so good and 9 = great). Complete the source table below and interpret the results of this study as completely as you can. [15 pts]

ANOVA Table for Rating

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Salt		89.9			<.0001	139.517	1.000
Beverage				53.8	<.0001	107.655	1.000
Salt * Beverage			.49		.5591	3.034	.216
Residual		23.2					

Means Table for Rating
Effect: Salt * Beverage

	Count	Mean	Std. Dev.	Std. Err.
1, Beer	5	8.000	.707	.316
1, Water	5	6.000	.707	.316
1, Wine	5	8.200	.837	.374
2, Beer	5	7.400	.548	.245
2, Water	5	4.200	.837	.374
2, Wine	5	7.200	.837	.374
3, Beer	5	5.000	1.000	.447
3, Water	5	2.200	.837	.374
3, Wine	5	4.800	.837	.374

5. Have you ever wondered if there is a relationship between where people tend to sit in a classroom and their performance in the class? Suppose that I decided to investigate this tendency by looking at the row in which a student sat and the student's grade in the course (A=4, B=3, etc.). The data from a sample of students from an introductory psychology class are seen below. Interpret these data as completely as you can. [15 pts]

Student	**Row**	**Grade**
1	3	2
2	1	4
3	6	2
4	2	3
5	7	1
6	1	4
7	3	2
8	5	2
9	7	0
ΣX	35	20
ΣX^2	183	58

6. Suppose that you are interested in the relationship between the time spent studying and the time it takes a person to complete an exam. You collect these data from 11 students and find that the coefficient of determination (r^2) is .81. Are you justified in computing the regression equation for prediction? Assuming that you are, and given the information from the students seen below, compute the regression equation to predict the time to complete an exam (Y) from the number of hours spent studying (X). (Hint: Think about the formula for r…you will be able to get to SP with the information you have here.) [15 pts]

	Hours Studying (X)	**Minutes to Complete Exam (Y)**
Mean	5	50
Variance	.2	7.2

7. An educational psychologist is studying student motivation in an elementary school in Florida. A sample of special students is followed over three years from fourth grade to sixth grade. Each year the students complete a questionnaire measuring their motivation and enthusiasm for school, with higher numbers indicating greater motivation. The psychologist would like to know whether there are significant changes in motivation across the three grade levels. The data from this study are as follows:

Student	Fourth Grade	Fifth Grade	Sixth Grade
M. Mouse	4	3	1
E. Fudd	8	6	4
D. Duck	5	3	3
B. Bunny	7	4	2
J. Cricket	6	4	0
ΣX (T)	30	20	10
SS	10.0	6.0	10.0

Analyze the results of this study as completely as you can. [15 pts]