Sociology 207V
Final Exam
December 18, 2002

Instructions: Answer all questions in the space provided. You have 2 hours (until 3:00). Show your work. For questions that don't involve calculations, explain the reasoning behind your answer. If you're not sure how to interpret a question, ask me.

2003 note: We haven't covered the material covered in questions 11 and 14d, so ignore them. We haven't discussed the material for 2, 4, 6 and 9b explicitly, so I wouldn't put them in the same way, but you may be able to answer them anyway. Looking back, the wording for question 5 was vague, so you may not be sure what I was getting at. But the topic is one we have covered this year. Also, the examples last year involved a different data set, so you won't recognize the variables. My examples this year will involve the religion (and possibly the weather) data set.

Questions 1-10 all involve the following regression results

Dependent variable

If a friend were driving too fast and caused and accident, would he have a right to ask you to lie to protect him? (1=definite right; 2=some right; 3=no right)

Independent variables

Age (years)
Highest year of school completed (years, 0-20; 16 means graduated from college)
Married (1=married; 0=not married)
Female (1=female; 0=male)
Black (1=black; 0=white and other races)
Anykids (1=has children; 0=no children)

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.385	.072		32.999	.000
	AGE OF RESPONDENT	.004	.001	.184	5.844	.000
	HIGHEST YEAR OF SCHOOL COMPLETED	.011	.004	.079	2.629	.009
	MARRIED	.083	.026	.102	3.193	.001
	FEMALE	.072	.024	.088	2.990	.003
	BLACK	-.046	.037	-.037	-1.248	.212
	ANYKIDS	.063	.031	.070	2.040	.042

a Dependent Variable: Friend have right to ask you to lie

1. What is the predicted value of the dependent variable for an unmarried 25 year old white man who graduated from college and has no children?

2. Who would be predicted to have a larger predicted value on the dependent variable, the man in question 1 or a 25 year old married white woman who finished 12th grade and has no children?

3. Suppose that the man in question 1 said "definite right". What is his residual?

4. The regression sum of squares for this model is 14.2. The residual sum of squares is 169.3. What is the R^2?

5. Which independent variables appear to have an effect on the dependent variable? Which ones (if any) don't appear to have an effect? Which ones (if any) can't you be sure about? Explain how you can tell.

6. Do the preceding results prove that any of the independent variables have an effect? Do they prove that any of the independent variables don't have an effect? Explain.

7. According to the regression results, does education make people more likely to say that the friend has a right to ask you to lie, less likely to say that the friend has a right to ask, or is it impossible to tell from the information given?

8. Suppose a sociologist has a hypothesis that marriage will have more effect on men's opinions than on women's opinions. How can this hypothesis be tested using regression? That is, what variable or variables should he include in the regression? What statistic or statistics should he look at to test his hypothesis?

9. Suppose you add another independent variable to the regression: do you believe in hell? (1=definitely; 2=probably; 3=probably not; 4=definitely not).

a. Would the R^2 increase, decrease, or stay the same, or is it impossible to know until you try it?

b. Would the regression coefficient (B) for Female increase, decrease, or stay the same, or is it impossible to know until you try it?

10. According to the preceding results, which independent variable is the most important? Explain how you can tell.

11. Explain what it means for an independent variable in a regression to be "statistically significant" in terms an ordinary person could understand.

12. Suppose you are interested in the relationship between a person's education and their mother's education. In a regression, which should be the dependent variable, own education, mother's education, or doesn't it matter? Explain why.

13. Suppose that you have a variable MARITAL (1=married; 2=single; 3=widowed, divorced, or separated. You create some dummy variables: "MARRIED" (1=married; 0=all others) and "SINGLE" (1=single; 0=all others).

For each of the following regressions, explain whether it would be a reasonable one to try or not. If not, explain what's wrong with it.

y=a+b MARITAL + e

y=a+b MARRIED + e

y=a+b SINGLE + e

14. In the following regression, the dependent variable is opinions about the statement "religious people are often intolerant" (1=strongly agree; 2=agree; 3=neutral; 4=disagree; 5=strongly disagree). Certain parts of the SPSS output have been removed. Some of them have been left blank, others replaced with a, b, c, d, e. For a,b,c,d, and e, calculate the correct number given the other information in the table. If it cannot be calculated from the information given, say so.

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.955	.193		15.287	.000
	AGE OF RESPONDENT	-.002	a	-.035	-1.147	.252
	HIGHEST YEAR OF SCHOOL COMPLETED	-.037		b	-3.340	.001
	MARRIED	.100	.070		c	.153
	FEMALE		.065	.097	3.343	d
	BLACK	e	.099	.076		
	ANYKIDS	.248	.082	.102	3.030	.002

a Dependent Variable: Religious people often intolerant

a.

b.

c.

d.

e.

15. Form a 95 percent confidence interval for the effect of "ANYKIDS".