Practice Questions for Exam

1. Identify each of the following as either qualitative or quantitative and either discrete or continuous. If the variable is quantitative, does it have an interval or ordinal scale?

(a) The number of bedrooms in your apartment

(b) The GDP of a country.

(c) The type of political system of a country (e.g. Democracy, Aristocracy, etc.).

(d) Access to clean water (yes, no).

(e) Public expenditures in education.

(f) Numbers of days a week you read the newspaper.

(g) Party affiliation.

2. You are interested in the relationship between a person's party affiliation and her parents' party affiliation. You have collected this data for students in our class. How could you describe the relationship using a graphical or tabular technique?

3. You have collected the income of students in our class. How could you summarize the distribution of this variable numerically?

4. Suppose that the correlation between a countries GDP and national debt of these countries is -0.8. How would you describe this relationship?

5. According to a recent Washington Post / ABC News poll of 1,000 adults, 11% think that the number of U.S. military forces in Iraq should be increased. Form a 95% confidence interval for this proportion.

6. The 2004 Latinobarometer asked respondents "how fair is income distribution in your country?" Table 1 shows the results for 969 respondents in Brazil

How fair is income distribution?	Frequency
Very fair	10
Fair	126
Unfair	514
Very unfair	319
Total	969

(a) How could you describe these data graphically?

(b) Report the median and the mode. Interpret.

7. A survey group asked respondents to place themselves on a left-right political ideological scale going form 0 (meaning left) to 10 (meaning right). The results for Mexico and Colombia are displayed in Table 2.

Ideological Scale	Percentages	
	Mexico (N= 927)	Colombia (N= 716)
0 Left	6 %	2 %
1	3 %	4 %
2	5 %	2 %
3	8 %	3 %
4	13 %	2 %
5	35 %	26 %
6	9 %	6 %
7	7 %	6 %
8	6 %	8 %
9	3 %	8 %
10 Right	5 %	34 %

Construct a 95% confidence interval around the difference in reported proportions for the two extreme categories, 0 and 10. Interpret.

8. A car manufacturer claims that its cars will run for an average of 20,000 miles before needing their first repair. To prove its claim, it has tracked a random sample of 21 cars. It found that the sample average number of miles before repair was 18,700, with a standard deviation of 8,600 miles. Test the null hypothesis that the population mean is 20,000 miles against the alternative that it is not.

9. A person claiming to possess extrasensory perception (ESP) says she can guess more often than not the outcome of a flip of a balanced coin in another room, not

visible to her. Of the ten coin flips, she guesses the correct result seven times. Does she posses ESP?

10. A deli you frequent claims that their sandwiches contain 1/4 of a pound of meat. You are quite suspicious of this claim and have measured and recorded the amount of meat in the last 17 sandwiches you purchased. You determine that the average amount of meat was 0.23 pounds with a standard deviation of 0.056 pounds. Are you being cheated?

11. In a survey conducted in 1992, senior high school students were asked if they had ever used marijuana. Of the females sampled, 445 said yes and 675 said no; of the males sampled, 515 said yes and 641 said no. Are male high school students more likely to use marijuana?

12. A random sample of 834 homes in Alabama and 717 houses in Mississippi were collected. The homes in Alabama had an average value of 114 thousand with a standard deviation of 13. The homes in Mississippi had an average value of 121 with a standard deviation of 18. Are real estate prices higher in Mississippi?

13. Consider the SPSS data file 'house.sav' available on the course website.

(a) The variables "dem_cand_id" and "rep_cand_id" are measures of the ideological positions of Democratic and Republicans House candidates in each congressional

district. What can you say about the relationship between these two variables? Justify your answer with a numerical measure.

(b) Test the null hypothesis that southern and non-southern congressional districts are equally conservative, using the 1% significance level. Interpret the result of this test. Use the variable 'id_survey' as the measure of district ideology. The variable "cd_south" is equal to 1 if the congressional district is in the south and 0 otherwise.

14. Consider the data file 'ises01.sav', which is a survey of Israelis after the 2001 prime-ministerial election. What is the relationship between a respondent's ideology and their attitude about returning the Golan Heights to Syria? Use the variable A66 (Right left) as your measure of respondent ideology and A22 (Return Golan to Syria) as your measure of support for returning the Golan Heights to Syria. Do the results conform to your expectations?