

Math 1431
Spring 2003 – Practice Test #4

Name _____

You are allowed to use your calculator. Explain all answers – answers with no explanation will receive only partial credit. Use complete sentences. Show how you used the calculator to answer the questions below. For each question, note which test on TI83 you used to find the answer.

1. (30 points) A poll was conducted to answer the question: Do you favor the President's economic policy? Here are the results of the poll:

	Republicans	Democrats
Number polled	400	500
Number who favor policy	275	225

- Is there a difference between the proportion of Republicans and the proportion of Democrats who favor the President's policy?
- Find the 95% CI for the data.

2. (10 points) The president of ABC college claims that 75% of the students have GPAs greater than 2.5. In a random sample of 300 students, it was determined that 71% have GPAs greater than 2.5.

- Using $\alpha = 0.05$ significance level, test the president's hypothesis.
- Find the 95% CI for the data.

3. (10 points) Suppose the IQ scores of business and English majors are the same. Six business majors and seven English majors are chosen at random and their IQ scores are tested. Here are the results:

Business majors	112	108	131	111	115	107	
English majors	114	102	119	113	110	123	103

- Is there a difference in the IQs of business and English majors?
- Find the 95% CI for the data.

4. (20 points) Eight pairs of five-year-old identical twins are assigned at random, each twin of a pair going into one of two groups learning to read using two different methods (a matched pair design). The twins in Group S are taught by a standard method and those in Group N by a new method. After six months, the same test is given to all the twins. The results are given below.

Group S	57	72	68	64	49	62	54	71
Group N	59	75	67	70	51	67	62	71

- Is there evidence that there is a difference in the test results of the twins in the two different groups?
- Find the 95% CI for the data.

5. (2 points) Suppose three candidates are running for office. A number of registered voters (classified by their political affiliation) are asked for their preference. Is there a relationship between a voter's political affiliation and their preference? (The expected counts are in parentheses.)

Political Affiliation	Candidate			Totals
	A	B	C	
Republican	10 (21.67)	35 (20)	5 (8.33)	50
Democrat	50 (34.67)	20 (32)	10 (10.33)	80
Independent	5 (8.67)	5 (8)	10 (3.33)	20
Totals	65	60	25	150