

1. A study is done of the weight of male students at the University at Albany. With a sample size of 21, the sample average is 165 lb., and the sample  $SD^+$  is 25. Give 80% confidence intervals for
  - a) the average
  - b) the standard deviationfor the weight of male students at Albany.
2. The average weight of American men may be taken to be 175, with an SD of 30. Use the data from the last problem to test the hypothesis that male Albany students are lighter on average than American men as a whole. What are the values of  $t$ ,  $df$ , and  $P$ ? What do you conclude?
3. A poll is taken in two different towns regarding a ballot proposition. In each town, 400 people are polled. In Town A, 65% of the sample support the proposition. In Town B, 71% of the sample support the proposition. Is the difference between the two towns real, or is it due to chance error? What are  $z$  and  $P$ ? What do you conclude?
4. A die is tested for fairness, rolling it 120 times. Here are the results:

number on die	1	2	3	4	5	6
observed freq.	27	15	24	25	14	15

What are  $\chi^2$ ,  $df$ , and  $P$ ? What do you conclude?

5. Test results are given for a second die, but you suspect the tester of fudging the results. The results presented are as follows:

number on die	1	2	3	4	5	6
observed freq.	21	19	22	19	19	20

What are  $\chi^2$ ,  $df$ , and  $P$ ? What do you conclude?

**Exam 3**

6. A study is made to see if voting and gender are independent. 200 men and 300 women are polled, to find out if they voted in the last election. The data obtained were as follows.

	Men	Women
Voted	95	165
Didn't vote	105	135

What are the values of  $\chi^2$ , df, and P? What do you conclude?

7. A new procedure is developed to try to lower the standard deviation for a certain variable. Under the standard procedure, we have  $\sigma = 30$ . A test of the new procedure gives  $S = 21$  with a sample size of 17. What are  $\chi^2$ , df, and P? What do you conclude?