

1. A poll is taken to see what percentage of the likely voters support a particular ballot proposition. In a sample of 550 likely voters, 56% of the sample supports the proposition. Give a 95% confidence interval for the percentage of all likely voters that support the proposition.
2. American men have an average weight of 205 with an SD of 25. You run a test to see if the men at UA weigh less than this. With a random sample of size 120, the average weight is 199, and $S = 28$. What are the values of z and P ? What do you conclude?
3. The national average for IQ is 100 with an SD of 15. A test is made to see if baseball players have above-average IQ's. The sample data is as follows:

122 105 116 100 118 103 119 104 110

What are the values of t , df , and P ? What do you conclude?

4. In 1988, 35% of the members of a particular political party were pro-choice. In 1998, it is 40%. You may assume both figures are based on simple random samples of size 500. Is the difference significant?
5. You test a die for fairness, rolling it 60 times. The outcomes are as follows:

number on die	frequency
1	8
2	12
3	6
4	15
5	5
6	14

What are the values of χ^2 , df , and P ? What do you conclude?

6. A botanist is crossing two strains of peas. Genetic theory says that $9/16$ of the offspring should be in group A, $3/16$ in group B, $3/16$ in group C, and $1/16$ in group D, provided the strains are pure.
He presents data for 320 offspring: 187 are in group A, 57 in group B, 58 in group C, and 18 in group D.
You run a χ^2 test to see if his data looks to have been fudged. What are the values of χ^2 , df , and P ? What do you conclude?

Exam 3

7. 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	90	175
Didn't vote	110	125

What are the values of χ^2 , df, and P? What do you conclude?

8. Theory predicts the SD for a variable should be 50. You take a random sample of size 15 to test this theory. The sample S is 35. What are the values of χ^2 , df, and P? What do you conclude?
9. You do a study to estimate the average and standard deviation for a certain variable. With a random sample of size 20, your sample has an average of 350, with $S = 45$. Give a 90% confidence interval for the population SD.