

A.P. Statistics
Assignment 10.2

Remember to show your thinking through your work.

1. Under what conditions can you run a chi-squared Goodness of Fit test?

2. Find the p-value for each by filling in the table (don't forget to complete the calculator command):

Degrees of Freedom	χ^2	Calculator command	p-value
4	5	χ^2 cdf(
4	10	χ^2 cdf(
4	15	χ^2 cdf(
4	20	χ^2 cdf(
3	15	χ^2 cdf(
4	15	χ^2 cdf(
5	15	χ^2 cdf(
6	15	χ^2 cdf(

3. In the first year of the AP Statistics exam, scores were distributed as follows:

Score	1	2	3	4	5
Percent	18.1	19.8	24.8	22.0	15.3

A sample of students from the state of Washington scored as follows:

Score	1	2	3	4	5
Frequency	50	89	101	138	121

- a. Does this data meet the conditions for a Goodness of Fit Test? Explain.

- b. Perform a goodness of fit test (be sure to change the population over to counts so you have what you would have expected to occur in Washington state).

- c. Which score contributed the most to the test statistic?

4. A regular 6-sided die is tossed 200 times with the faces turning up as follows:

Number	1	2	3	4	5	6
Frequency	34	28	35	31	31	41

Is there reason to suspect that the die is not fair? Run a complete test.