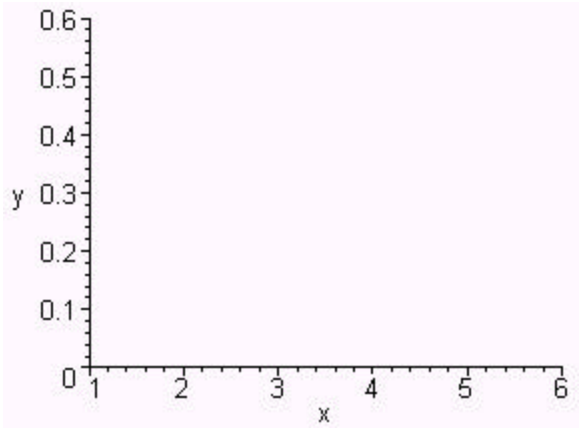
1/14/2001 MA331 Applied Prob/Stats I Name:_____
Dr. Lunsford Quiz 1 (20 Points Total)

Note: On this quiz you are welcome to use technology to do your computations but please give the formulas you are using to compute the quantities.

I. An urn contains 8 red balls and 3 green balls. An experiment is performed in which five balls are drawn from the urn at one time. Let the random variable X count the number of red balls in the draw. Please answer the following:

a. Below you are given the relative frequency histogram for the probability distribution of X. Find m_X and s_X and draw the interval $(m_X - s_X, m_X + s_X)$ on the graph. (6 points)



Now suppose we perform the experiment counting the number of red balls drawn each time. The sample data we record are:

4, 3, 2, 4, 5, 4, 3, 5, 4, 3
3, 4, 4, 4, 4, 4, 5, 4, 4, 3

a. Plot the relative frequency histogram for the sample data on the same axes provided as the frequency histogram for the probability distribution. (5 points)

b. Find the sample mean, $\overline{X}$, of the data. (4 points)

c. Find the sample standard deviation, S, of the data. (4 points)

d. Based on your reading of *Statistics You Can't Trust*, the value of the mean of a set of data can be very sensitive to what? (1 point)