I. An urn contains 7 red balls and 3 green balls. An experiment is performed in which four 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. What are the possible values of the random variable X (i.e. what is S_X)?   (2 points)

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

$$2, 4, 3, 3, 3, 2, 3, 2, 1, 4$$

a. Plot the relative frequency histogram for the sample data on the axes provided below. (6 points)
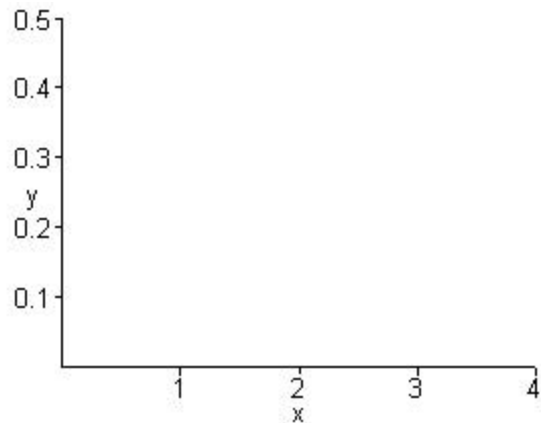
b. Find the sample mean, $\overline{X}$, of the data. Show all work for your computation. (4 points)

c. Find the sample standard deviation, S, of the data. Show all work for your computation. (5 points)

d. Compute the interval $(\overline{X} - S, \overline{X} + S)$ and show it on the histogram above.   (2 points)

e. 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)