Data Analysis 5 Name _____

1. The Virginia Cooperative Extension reports that the mean weight of yearling Angus steers is 1152 pounds. Suppose that the standard deviation is 84 pounds. How many standard deviations from the mean would a steer weighing 1000 pounds be?

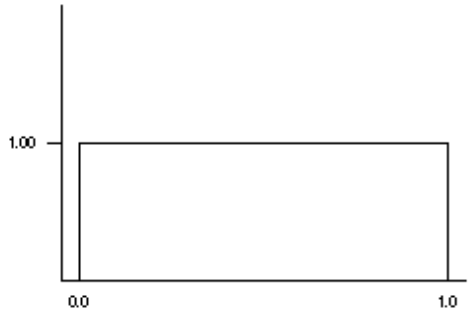
2. John Beale of Stanford, CA, recorded the speeds of cars driving past his house, where the speed limit is 20mph. The mean of 100 readings was 23.84 mph, with a standard deviation of 3.56 mph. How many standard deviations from the mean would a car going the speed limit be?

3. Suppose your Statistics professor reports test grades as z-scores, and you got a score of 2.20 on an exam. Write a sentence explaining what that means.

4. The yearling Angus steers described in #1 had a mean weight of 1152 pounds with a standard deviation of 84 pounds. What's the actual weight of an animal whose z-score is -1.5?

5. The first Stats exam had a mean of 65 and standard deviation of 10 points; the second has a mean of 80 and standard deviation of 5 points. Derrick scored an 80 on both tests. Julie scored a 70 on the first test and a 90 on the second. They both totaled 160 points on the two exams, but Julie claims that her total is better. Explain.

6. The picture below shows the density curve for a uniform distribution. The curve has height 1 over the interval from 0 to 1 and is zero outside that range.



a. Why is the height of the curve equal to 1?
b. What is the mean (balance point) of the curve?
c. What is the median?
d. What percent of the observations lie between 0 and 0.4?

7. For this problem refer to #6. Let's consider a uniform distribution over the interval 0 to 2.

a. Sketch a graph of the density curve. What is the height of the curve? Why?
b. What percent of the observations lie between 1 and 1.4?
c. Find the median and the quartiles for this distribution. Show your work.