Name:_____ **6/12/2017**

Math 173 Introduction to Probability and Statistics **Quiz 1**

1. Here are 20 measurements (listed from least to greatest).

   .50, .56, .78, .91, .91, 1.01, 1.03, 1.11, 1.21, 1.33,

   1.46, 1.50, 1.65, 1.66, 1.84, 2.27, 2.49, 2.50, 2.88, 3.11

   (a) (8 points) Create a relative frequency histogram below using 6 classes of width .5. The first class should be $[.5, 1)$.

   (b) (4 points) What proportion of the measurements are less than or equal to 1.5?

   (c) (4 points) How would you best describe the distribution: right-skewed, left-skewed, or symmetric?

2. You are given a sample of $n = 6$ measurements: 2, 3, 4, 5, 3, 7.

   (a) (4 points) What is the median, m?

   (b) (4 points) What is the mean, $\bar{x}$?

   (c) (4 points) What is the mode, M?

   (d) (4 points) What is the variance, s^2?

   (e) (4 points) What is the standard deviation, s?

3. (4 points) Suppose a sample of 100 measurements are collected with mean $\bar{x} = 12.6$ and standard deviation $s = 1.2$. According to Tchebysheff's theorem, at least what proportion of measurements lie between 9.6 and 15.6 (i.e. within 2.5 standard deviations of the mean)?