STAT 1450, Quiz #3, Fall 2013   Name _____ KEY _____

Instructions: Show all work. You may use your calculator to check, but the calculations should be done by hand.

1. Suppose you did a very quick survey of people in your office about the number of children each family had still living at home. You obtained the following results.

$$0, 0, 1, 2, 6$$

   Calculate the following from the data set.
   a. The mean and median.
   b. The range
   c. Estimate of the standard deviation from the range.
   d. The standard deviation (treating the results you have as a sample).
   e. Determine if the value 6 is unusual by finding its z-score.

median = 1   mean = 1.8   range = 6   st. dev. est. $\approx$ 1.5
                                                            range rule of thumb

$(1.8^2 + 1.8^2 + .8^2 + .2^2 + 4.2^2) = 24.8$

$\frac{24.8}{4} = 6.2$ $\sqrt{6.2} \approx 2.49 = s$ $s = \sqrt{\dfrac{\Sigma(x-\bar{x})^2}{n-1}}$

$z = \dfrac{6-1.8}{2.49} = 1.69$ no, this is < 2.   not unusual.

2. For the data listed below, give the five number summary.

   $64, 66, 66, 68, 71, 73, 73, 77, 78, 78, 80, 82, 86, 87, 87, 89, 94, 97, 97, 99, 99, 100, 107$

   n=23
   med at L=13

min = 64

Q_1 = 73 (by locator method)

median = 86

Q_3 = 97 (by locator method)

max = 107