1. Describe the difference between specification limits and control limits. (2 pts)

   Specification limits are set by the customer

   Control limits are determined by manufacturer

2. What is the median grade in the data set below? (2 pts)
   Median is the middle number of a data set. There are 13 grades, so grade #7 is the middle.

   74   82   82   86   86   86   88   88   91   93   95   98   99

3. What is the mode of the data set below? (2 pts)
   Mode is the value that appears most often.   8 appears four times.

   3   4   5   6   6   6   8   8   8   8   9   9   10   11   12   13

4. Five parts were selected at random from a finished batch. The overall lengths recorded are listed below.
   Can the batch be released for sale? (2 pts)   YES   **NO**

        Specification   1.435 - 1.455 inches

              1.4490

              1.4378

              1.4349   this value rounds into specification

              1.4552

              1.4556   this value rounds out of specification

5. How can the implementation of SPC affect the cost of quality (internal, appraisal, external, preventive)? (2 pts)

   "… SPC is applied to monitor and control a process. … At its full potential the process can make as much conforming product as possible with minimum waste…"

    Internal and appraisal costs are reduced, prevention costs may be increased (cost of software)

6. Match the following (5 pts)

   A. Standard Deviation   _ 2 _   1. Measure of shape

   B. Green shirts per Class   _ 4 _   2. Measure of dispersion

   C. Normal   _ 1 _   3. Measure of central tendency

   D. Miles per Gallon   _ 4 _   4. Qualitative measure

   E. Median   _ 3 _   5. Quantitative measure