(20 pts.) 1. Below are the unique weekly visitors to http://john-weber.com for the last 20 weeks:

   16  57  48  68  39  39  42  28  59  29  32  81  29  6  3  5  36  53  45  40

   a. Make a stemplot showing the distribution of visitors.
   b. Make a histogram (with a class width of 10) showing the distribution of visitors.
   c. Describe the distribution.

(25 pts.) 2. The following are the number of semester credits taken by 11 students and GPA earned for the semester:

| credits, x | 10 | 18 | 12 | 15 | 16 | 16 | 22 | 9 | 10 | 12 | 15 |
| GPA, y     | 3.5 | 2.8 | 3.3 | 3.7 | 2.9 | 3.0 | 2.4 | 3.1 | 3.5 | 3.4 | 3.2 |

   a. Describe the overall pattern of the scatterplot.
   b. Compute the correlation coefficient.
   c. Find the least-squares regression line.
   d. What percent of the observed variation in GPA is explained by a straight-line relationship with the number of credits taken?
   e. Predict the GPA of a student taking 6 credits.

(20 pts.) 3. a. Find the mean, five-number summary and standard deviation of the data below:

   113  105  130  101  138  118  87  116  75  96  122  103  116
   107  118  103  111  104  111  89  78  100  89  85  88  93

   b. Present these measurements with the graph of your choice. Explain why you chose the type of graph.
   c. Does the shape of the distribution allow the use of mean and standard deviation to describe it? Explain.

(25 pts.) 4. The mean weight of males at a certain college is 151 pounds and the standard deviation is 15 pounds. Assuming that the weights are normally distributed, find the proportion of male students who weigh:

   a. between 120 and 155 pounds. Sketch the area.
   b. more than 185 pounds. Sketch the area.
   c. less than 170 pounds. Sketch the area.
   d. What weights would males in the lowest 3% weigh?
   e. Use the 68–95–99.7 rule to determine between what two weights do the middle 95% of men fall.
   f. Use the 68–95–99.7 rule to what percent of men whose weights are lower than 106 pounds.

Short Answers

(5 pts.) 5. Name two measures of a distribution which are resistant measures and two that are not resistant measures. Explain.

(5 pts.) 6. What is the purpose of a standard normal distribution?

Extra Credit

(2 pts.) 7. Given a normal distribution with \( \mu = 505 \) and \( \sigma = 101 \), what is the \( z \)-score for \( x = 645 \)?