

STAT 345 - Summer, 2006: Quiz 10 (take home)
BASED ON SECTIONS: 6.1, 6.3 – 6.5

For the following four data sets

- Find the mean and standard deviation.
- Find the 5 number summary.
- Make a histogram.
- Make a stem-and-leaf plot.
- Make a boxplot.
- Comment on the values and the plots you found above.

You may use Minitab, another software program or you may do it by hand. In Minitab, boxplots can be created by selecting “Boxplot of data” along with “Histogram of data” when you find the descriptive statistics. (Which is what you did in your last 2 Minitab assignments.) Stem-and-leaf plots can be found under the *Graph* menu. All data is located at the course website.

1. Many Vietnam veterans have dangerously high levels of dioxin 2,3,7,8-TCDD in blood and fat tissue as a result of their exposure to the defoliant Agent Orange. A study published in *Chemosphere* (1990) reported on the TCDD levels of 20 Massachusetts Vietnam veterans who were possibly exposed to Agent Orange. The amounts of TCDD (measured in parts per trillion) in blood plasma drawn from each veteran are given in the table below:

2.5	3.5	6.8	4.7	4.6
1.8	2.5	3.1	3.1	3.0
6.9	1.6	20.0	4.1	2.1
1.8	36.0	3.3	7.2	2.0

2. The tar content in 30 samples of cigar tobacco follows:

Table 2: Tar data

1.542	1.622	1.440	1.459	1.598
1.585	1.466	1.608	1.533	1.498
1.532	1.546	1.520	1.532	1.600
1.466	1.494	1.478	1.523	1.504
1.499	1.548	1.542	1.397	1.545
1.611	1.626	1.511	1.487	1.558

3. A 1992 article in the Journal of the American Medical Association (“A Critical Appraisal of 98.6 Degrees F, the Upper Limit of the Normal Body Temperature, and Other Legacies of Carl Reinhold August Wunderlich”) reported body temperature, gender, and heart rate for a number of subjects. The body temperatures for 25 female subjects follow:

Table 3: Temperature data

97.8	97.2	97.4	97.6	97.8
97.9	98.0	98.0	98.0	98.1
98.2	98.3	98.3	98.4	98.4
98.4	98.5	98.6	98.6	98.7
98.8	98.8	98.9	98.9	99.0

4. Cloud seeding has been studied for many decades as a weather modification procedure (for an interesting study of this subject, see the article in Technometrics by Simpson, Alsen, and Eden, “A Bayesian Analysis of a Multiplicative Treatment Effect in Weather Modification”, Vol. 17, pp. 161 – 166). The rainfall in acre-feet from 20 clouds that were selected at random and seeded with silver nitrate follows:

Table 4: Rainfall data

18.0	30.7	19.8	27.1
22.3	18.8	31.8	23.4
21.2	27.9	31.9	27.1
25.0	24.7	26.9	21.8
29.2	34.8	26.7	31.6