

PORTLAND STATE UNIVERSITY
Department of Mathematics & Statistics
FALL TERM 2009

STAT 451/551 Assignment #2 Due Wednesday, October 14
Professor Tableman

1. Refer to the Michelson's Supplementary Speed of Light data. This is posted on my web page where the class notes are found. For this entire exercise, use only calculator, ruler, and pencil (pen).
 - (a) Compute the mean (sample average) \bar{X} , median, and mode.
 - (b) Compute the range R, interquartile range IQR, standard deviation S, and the mean absolute deviation MAD.
 - (c) Provide the 5-number summary tablet.
 - (d) Construct the boxplot.
2. Enter the above data into MINITAB. Use Stat ▷ Basic Statistics ▷ Display Descriptive Statistics to answer (a) and (b) (This output does not calculate the MAD, range, IQR, and the mode. So don't worry. It does give the MIN, MAX, and 1st and 3rd quartiles. From these compute the Range.)
Use Graph ▷ Boxplot to answer (d) in problem 1 above.

Note: The percentiles given by MINITAB may differ from the ones you calculate using the formula we learned. This is o.k. as MINITAB uses yet another formula. As the number of data values become larger and larger, the different formulae begin to yield the same percentile value.

3. In a distribution of 200 values, the mean is 50 and the standard deviation is 5. Use Chebyshev's theorem to answer the following:
 - (a) At least how many values will between 30 and 70?
 - (b) At most how many values will be less than 40 or more than 50?
4. Exercise #68, page 43.
5. Exercise #69, page 43.
6. Exercise #78, page 44. In part a., what is the value of \bar{y} (the average of the y_i 's)? In part b., what is the value of \bar{z} (the average of the z_i 's)?
7. Exercise #79, page 44.