Math4020
Statistics Worksheet

1. Use the "Data on Us" table to complete the following. Please show all of your work (neatly).
   (a) For the variable # *hours study per week*, calculate the mean, median, mode, and standard deviation.
   (b) Make a bar graph for the variable *favorite color*.
   (c) Create a line plot for the # *of siblings*.
   (d) Create a histogram for the *time it takes to get ready* times for the class.
   (e) Make a circle graph (a.k.a. pie chart) for the *grade you want to teach*.
   (f) Calculate the lower and upper quartile and then make a box and whisker plot for the $ spent on fun per month.
   (g) To investigate the possible relationship between the *height* and *length of middle finger* variables, make a scatter plot (with height on the vertical axis and length of middle finger on horizontal axis).
      (i) Are there any outliers? If so, label them.
      (ii) Indicate whether there seems to be a correlation or not. If there is, then draw the line that seems a best fit.
      (iii) If you drew a best fit line for part (ii), then find the equation of that line.

2. Suppose that the average teacher salary in a given state is $34,000 with a standard deviation of $2,700.
   (a) 68% of the teachers will have a salary on what interval centered about the mean?
   (b) 84% of the teachers have salaries below what amount?
   (c) How many teachers will make more than $28,600?

3. Suppose there are four third-grade classes in your school containing 25, 28, 30, and 27 students. These classes have average test scores of 71, 79, 76, and 80, respectively. What is the overall third-grade average for this test?

4. Make up a set of data values (no more than ten values in each data set) to illustrate each of the following conditions, or explain why it is impossible.
   (a) A data set that satisfies mean < median < mode.
   (b) A data set that has a mean of 8.0 and the sum of the data values is 67.
   (c) A set of at least four values that has a mean of 20, but all the data values except one are greater than 20.