Math 21 – Pointers for Section 2.2 Stem & Leaf, Dotplot, Shape of Distribution

Stem-and-Leaf Display

A stem-and-leaf display is a quick way to organize a data set into ascending order in a shorthand notation.
We break each value into two parts – a stem and a leaf. The stem is the first part of the number, the leaf is the last part of the number.
If you are dealing with a two digit number like 85, the stem is 8 and the leaf is 5.
If you have 3 digit numbers, the stem could be just the first digit (if the numbers are spread out over several hundreds) or the first two digits (if the numbers are all within a hundred or so). The good news, most of the data we will use have only two digits.

When trying to analyze a set of data, a stem-and-leaf display is a great place to start. It puts your data in order, makes it easier to create a frequency distribution, and if you look at its shape you can get a preview of what the histogram looks like. Also, when we start calculating the median and quartiles of a set of data (Chapter 3), you need to have the data in ascending order from low to high.

StatCrunch

- To make a stem-and-leaf display in StatCrunch, type the data in 1 column (1 value per line).
- Click on Graph > Stem and Leaf.
- Select the column containing the data.
- Always set "Outlier Trimming" to "None".
- Click on "Compute!"

One last thing, you can always copy your results to Microsoft Word by clicking on the Options button and following the directions to copy your results. Once in Word, you can edit the display as you wish.

Dotplot

A dotplot is a graph that is similar to a histogram for discrete data, except instead of bars we place a dot above the value. Place one dot for each time the value occurs.

StatCrunch

- To make a dotplot in StatCrunch, type the data in 1 column (1 value per line).
- Click on Graph > Dotplot.
- Select the column containing the data.
- Click on "Compute!"

Shape of a Distribution

There are 4 distribution shapes that we talk about in this chapter.

- Uniform – The histogram will look like a rectangle.
- Bell shaped symmetric – The histogram will look close to the shape of a bell, with the peak at the center and tailing off in both directions.
- Left Skewed – Like bell shaped symmetric, except the histogram will be stretched out to the left.
- Right skewed – Like bell shaped symmetric, except the histogram will be stretched out to the right.