Section 2.3

Additional Displays of Quantitative Data

Frequency Polygon

A graph that uses points, connected by line segments, to represent the frequencies for the classes. It is constructed by plotting a point above each class midpoint on a horizontal axis at a height equal to the frequency of the class. Next, line segments are drawn connecting consecutive points. Two additional line segments are drawn connecting each end of the graph with the horizontal axis.

Creating Frequency Polygon in Excel

1. Put midpoints in column A, frequencies in column B
2. Insert a row at the beginning and at the end with the appropriate midpoints (use class width) and put zeros for the frequency
3. Highlight midpoints and frequencies
4. Choose Insert Tab -> Scatter -> Scatter with Straight Lines and Markers

Cumulative Frequency Distribution

- Displays the aggregate frequency of the category. In other words, for discrete data, it displays the total number of observations less than or equal to the category. For continuous data, it displays the total number of observations less than or equal to the upper class limit of a class

Cumulative Relative Frequency Distribution

- Displays the proportion (or percentage) of observations less than or equal to the category for discrete data and the proportion (or percentage) of observations less than or equal to the upper class limit for continuous data

Ogive (“oh jive”)

- A graph that represents the cumulative frequency or cumulative relative frequency for the class. It is constructed by plotting points whose x-coordinates are the upper class limits and whose y-coordinates are the cumulative frequencies or cumulative relative frequencies of the class. Then line segments are drawn connecting consecutive points. An additional line segment is drawn connecting the first point to the horizontal axis at a location representing the upper limit of the class that would precede the first class (if it existed)

Creating Ogive in Excel

1. Put UCLs in column A, cumulative frequencies or relative frequencies in column B
2. Insert a row at the beginning with the appropriate UCL (use class width) and put zero for the cumulative frequency
3. Highlight UCLS and frequencies
4. Choose Insert Tab -> Scatter -> Scatter with Straight Lines and Markers

Time-Series Plot

- Obtained by plotting the time in which a variable is measured on the horizontal axis and the corresponding value of the variable on the vertical axis. Line segments are then drawn connecting the points

Creating Time-Series Graphs in Excel

1. Put dates in column A, quantity in column B (whatever you are study. ex: stock prices)
2. Highlight dates and values
3. Choose Insert Tab -> Scatter -> Scatter with Straight Lines and Markers