Creating a **Frequency Histogram** and **Cumulative Frequency Polygon** in Excel
GEOG 326 Winter 2011 Section Handout

1. Enter original data for case study (hint: use Data>Text to Columns after a copy and paste)

Number of Working Hours for 50 People in a Week

23.44	28.01	40.03	27.9	25.45	33.12	39.99	41.51	25.48	16.87
21.49	43.51	39.24	17.61	33.05	15.22	43.3	29.29	31.83	30.64
35.35	35.66	36.25	25.24	39.77	42.22	27.29	39.56	37.25	44.87
25.85	42	32.7	32.51	36.35	36.08	33.36	22.27	27.24	24.44
35.55	42.33	36.68	17.5	30.4	33.8	24.85	30.2	21.08	35.89

2. Enter the Upper Limits of the bins (hint: check for the maximum value)

Upper Bound
19.99
24.99
29.99
34.99
39.99
44.99

3. Calculate using "FREQUENCY" function (hint: highlight all cells you want to fill before entering "="; also press CNTRL+SHIFT+ENTER after closing parentheses for array functions)

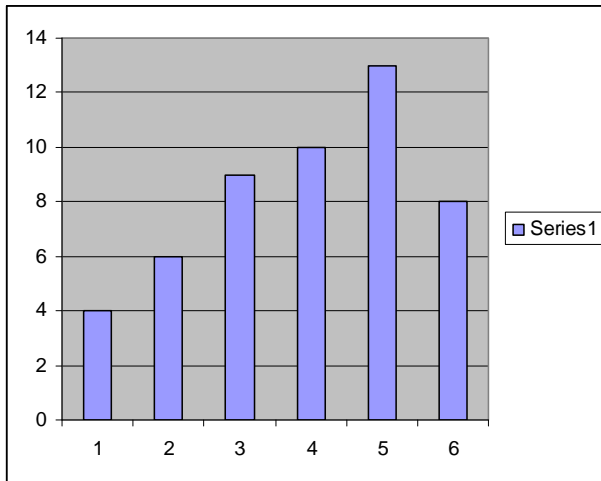| Upper Bound	Frequency
19.99	4
24.99	6
29.99	9
34.99	10
39.99	13
44.99	8

4. Calculate the Cumulative Frequency (hint: insert a row for "0" for graphing later)

Upper Bound	Frequency	C. Frequency
		0
19.99	4	4
24.99	6	10
29.99	9	19
34.99	10	29
39.99	13	42
44.99	8	50

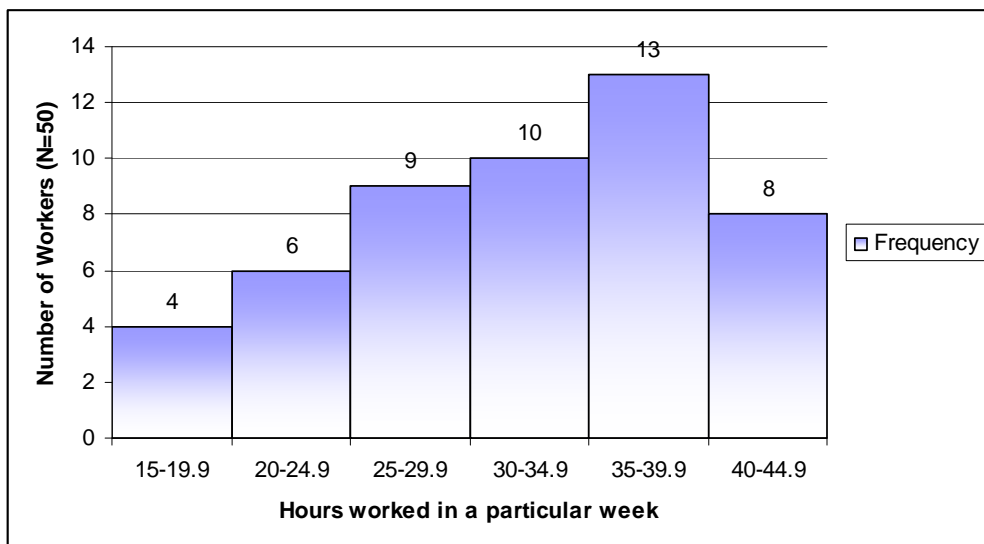5. Add x-axis labels for the frequency histogram and for the cumulative frequency polygon.

Upper Bound	Frequency	C. Frequency	Hist x-axis	Poly x-axis
		0		15
19.99	4	4	15-19.9	20
24.99	6	10	20-24.9	25
29.99	9	19	25-29.9	30
34.99	10	29	30-34.9	35
39.99	13	42	35-39.9	40
44.99	8	50	40-44.9	45

6. Highlight the frequency cells and Insert>Chart. Accept the first column chart and press finish.
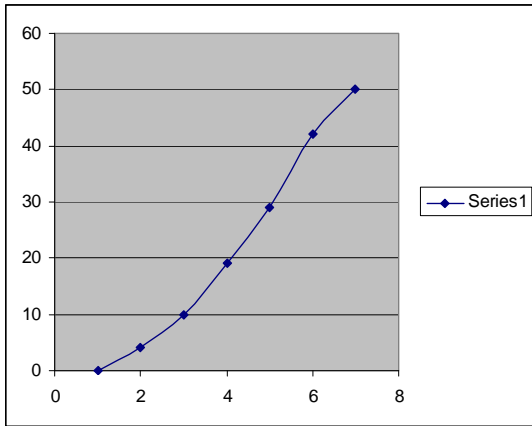

7. Format the chart
   a. Remove gaps between bars
      i. Right-click on bars>Format Data Series>Options: change gap (from 150) to 0
   b. Give shading to the bars
      i. Right-click on the bars>Format Data Series>Patterns>Fill Effects
   c. Remove gray color behind bars
      i. Right-click on gray area>Clear
   d. Name the Series and specify the x-axis values
      i. Right-click on the white area>Source Data>Series
         1. Enter "Frequency" for Name
         2. For the Category X-axis Labels, select the cells from Hist x-axis
   e. Add titles to axes
      i. Right-click on white area>Chart Options>Titles: Enter names for X and Y axis
   f. Add numbers to bars
      i. Right-click on white area>Chart Options>Data Labels: Check "Values"

8. Highlight the cumulative frequency cells and Insert>Chart. Select a scatter plot of sub-type "Scatter with data points connected by smoothed lines". Hit finish.

9. Format the chart
   a. Remove gray color behind bars
      i. Right-click on gray area>Clear
   b. Format the axes scales
      i. Right-click on y-axis>Format Axis>Scale: Change Max Value to 50
      ii. Right-click on x-axis>Format Axis>Scale: Change Min Value to 15
   c. Name the Series and specify the x-axis values
      i. Right-click on the white area>Source Data>Series
         1. Enter "Cumulative Frequency" for Name
         2. For the Category X-axis Labels, select the cells from Poly x-axis
   d. Format the axes scales
      i. Right-click on y-axis>Format Axis>Scale: Change Max Value to 50
      ii. Right-click on x-axis>Format Axis>Scale: Change Min to 15 and Max to 45.
   e. Add titles to axes
      i. Right-click on white area>Chart Options>Titles: Enter names for X and Y axes