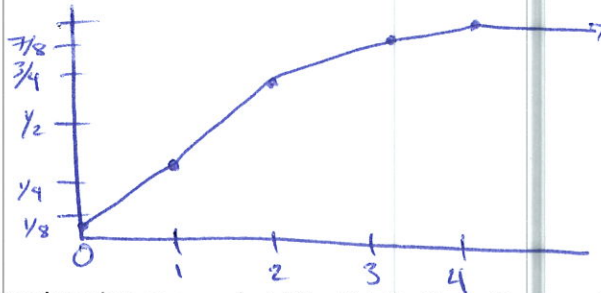


MAT 223, Discussion Questions 9.04

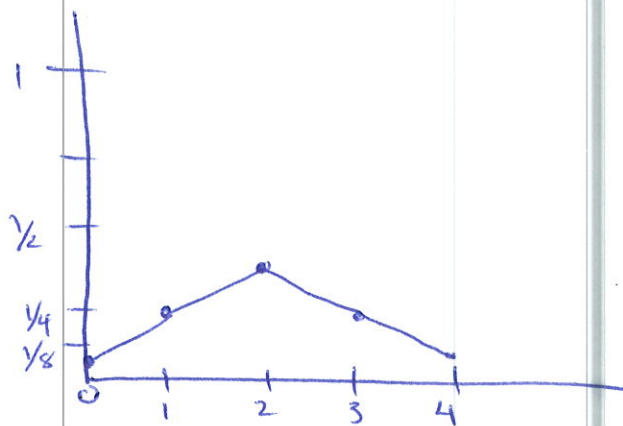
1. Below is a table of a cumulative distribution function for tossing 4 coins and counting the number of heads in each toss. Use this data to create an ogive graph.

# of Heads	0	1	2	3	4
Probability ( $X \leq x$ )	$\frac{1}{16}$	$\frac{5}{16}$	$\frac{11}{16}$	$\frac{15}{16}$	1



Below is the same situation as a probability distribution. Create a frequency polygon of the distribution.

# of Heads	0	1	2	3	4
Probability ( $X = x$ )	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{16}$



2. In a cumulative frequency chart/graph, what is the highest value the chart/graph can have?

1 (or total count)

3. What are the advantages of a stem-and-leaf plot over a histogram?

Can read all the data  
easy to construct from a sorted list

4. When creating a stem-and-leaf plot from 2-digit data, when should you split the 10s into groups of 5s instead?

*When there are fewer than 5 bins  
(generally speaking)*

5. The following is a stem-and-leaf plot of 12 exam scores. (The stem is the tens place and the leaf is the ones place.) Redo the stem-and-leaf plot for the same data by splitting it into groups of 5s instead. Which one is better?

6 | 8  
7 | 66  
8 | 0488  
9 | 22666

6 | 8  
7 |  
7 | 66  
8 | 04  
8 | 88  
9 | 22  
9 | 666

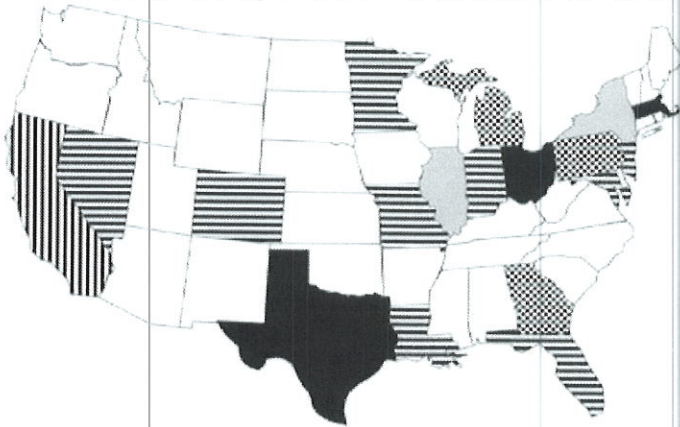
*both suggest the data is  
left-skewed*

*68 appears to be a stronger outlier  
in groups of 5's*

6. What kind of data is used when creating a line graph (typically)?

*time-series data  
quantitative data*

7. What kind of graphs are shown below. If there are problems with the graph, say what they are. Note: not all the graph types shown are covered in the book. If you encounter one, say so.



No. of Meetings

0	1	2
3	5	7

a.

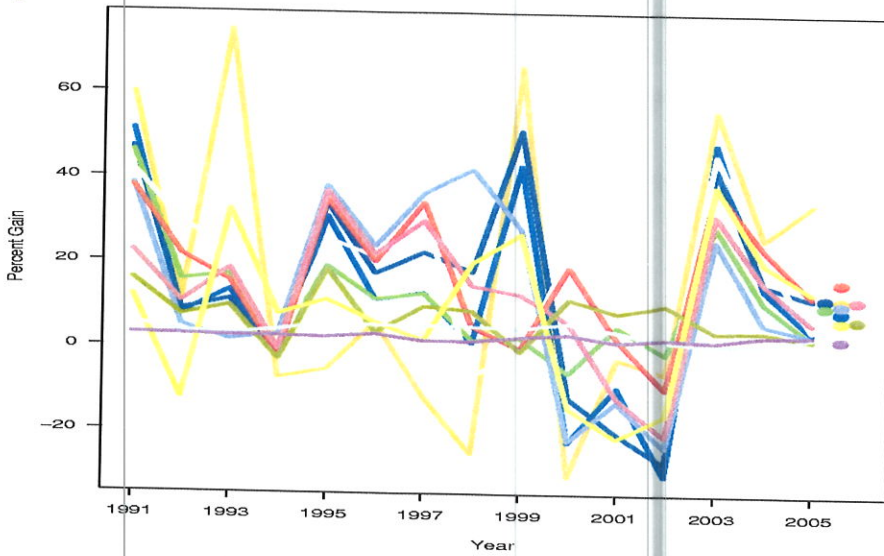
*difficult to look  
at*

*not well-labeled  
what is it graphing?*

*maps not covered  
in textbook*

line graph

too much  
in one  
graph.  
difficult to  
read



b.

Male		Female	
5, 2, 0	1	5, 8	
5, 1	2	1, 6, 9, 9	
5, 5, 5, 3, 1	3		
5, 2	4	1, 2, 6, 8	
9, 8, 6, 1, 1	5	5	
6, 5, 5, 0	6	0, 1	
2, 1, 1, 0, 0	7	2	

Comparative  
Stemplot

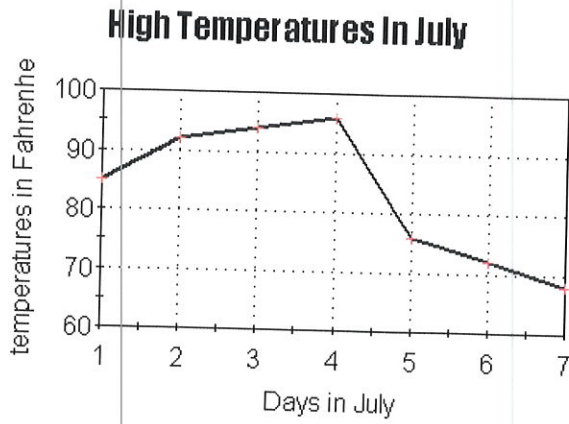
missing key  
what is being  
graphed?  
what is data  
measuring?

c.

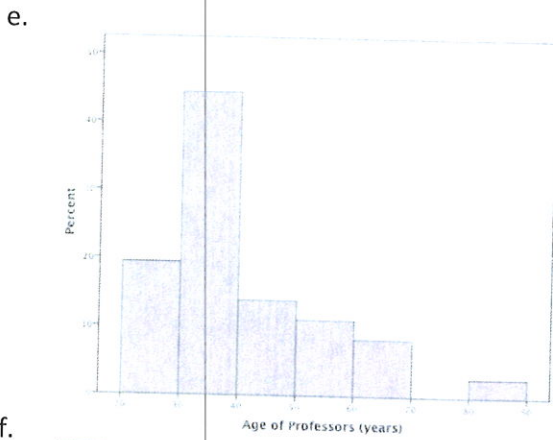


boxplot  
needs title

d.

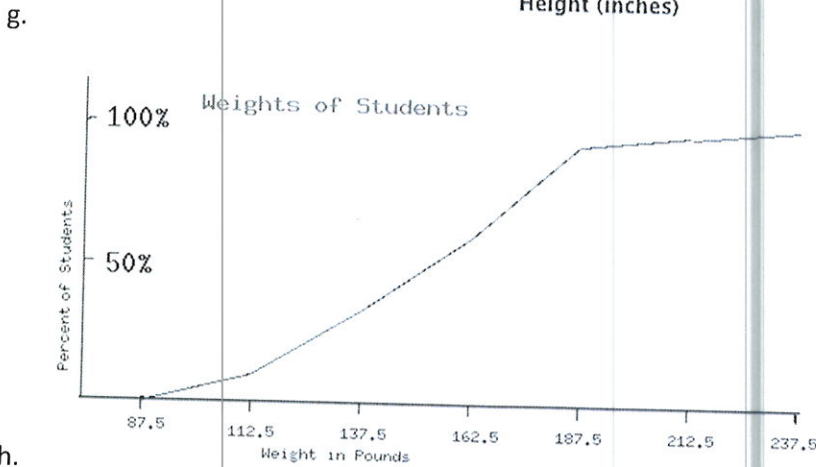
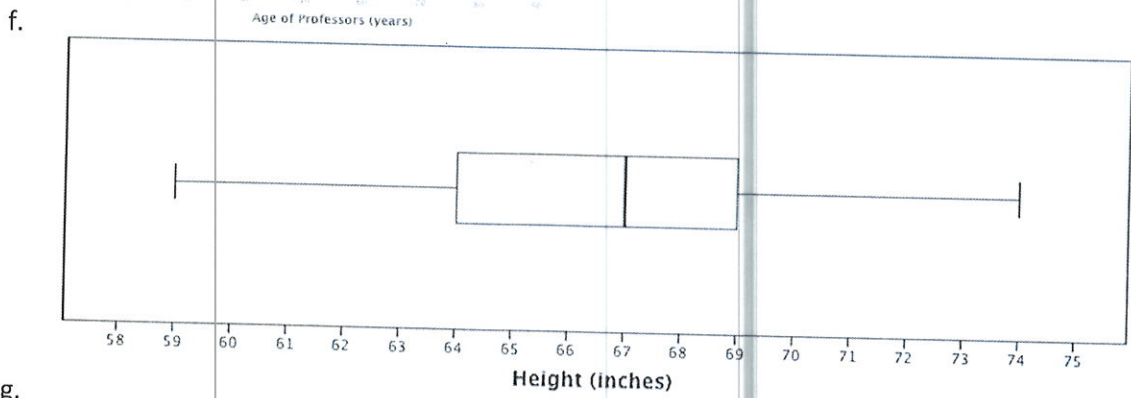


*line graph  
good labels*



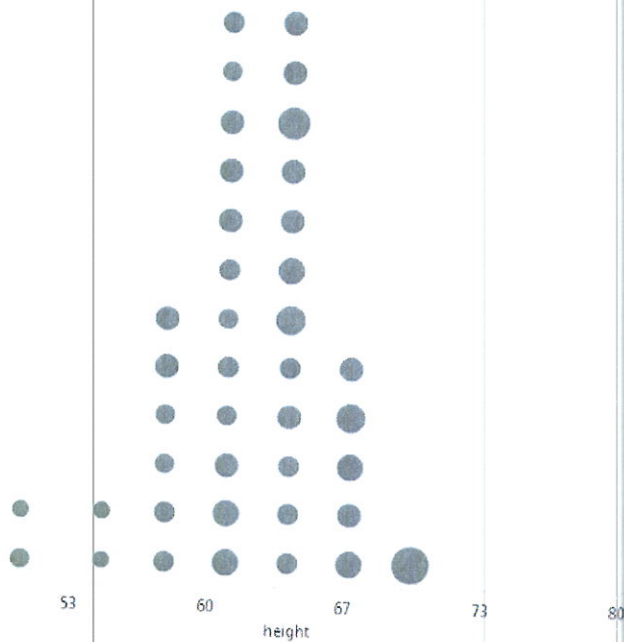
*histogram  
good*

*boxplot*



*ogive graph*

h.



dot plot  
 not sure what  
 size of dots  
 means.

- i.
8. Use Google or another search engine to find examples of each type of graph listed below to share with the class.
- Line graph
  - Dot plot
  - Stem-and-leaf plot (stemplot)
  - Histogram
  - Bar chart or Pareto chart
  - Frequency polygon
  - Ogive graph
  - Pie chart

answers will vary  
 find examples by  
 doing an image search

9. Read the following article <http://io9.com/how-the-nocebo-effect-can-trick-us-into-actually-dyin-1681746203>. What would a nocebo effect look like in education?