

## Statistics Ch. 2 Test Review Organizing Data

1. Consider these types of graphs: histograms, bar graph, Pareto chart, pie chart, dot plot, and stem-and-leaf display.

a. Which are suitable for qualitative data?

Bar graph, Pareto chart, pie chart

b. Which are suitable for quantitative data?

all

2. A consumer interest group is tracking the percentage of household income spent on gasoline over the past 30 years. Which graphical display would be more useful, a histogram or a time-series graph? Why?

A time-series graph, because the change in data over time is the most relevant issue.

3. Describe how outliers might be revealed in histograms and stem-and-leaf plots.

Any large gaps between bars or stems-and-leaves at the beginning or end of the data set might indicate that the extreme data values are outliers.

4. What must you always remember when creating a graph?

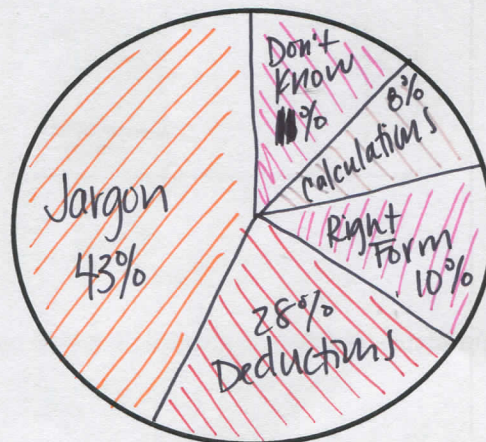
title, #'s on the axes, label the axes

5. Compare and contrast dot plots and stem-and-leaf plots.

Dot plots & stem-&-leaf displays both show all the data values. Stem & leaf group all data having the same stem, while dot plots group only data values that are exactly the same.

6. Almost everyone files a federal income tax return (or will someday). A research poll for TurboTax asked what aspect of filing a return people thought to be the most difficult. The results showed that 43% of the respondents said understanding the IRS verbage, 28% said knowing deductions, 10% said selecting the right form, 8% said calculating the numbers, and 11% did not know what made it difficult. Make a circle/pie graph to display this information.

Problems  
w/ Tax  
Returns



7. Driving under the influence of alcohol (DUI) is a serious offense. The following data give the ages of a random sample of 50 drivers arrested while driving under the influence of alcohol. This distribution is based on the age distribution of DUI arrests given in the *Statistical Abstract of the US* (112<sup>th</sup> Edition). Make sure to include title and label of the axes.

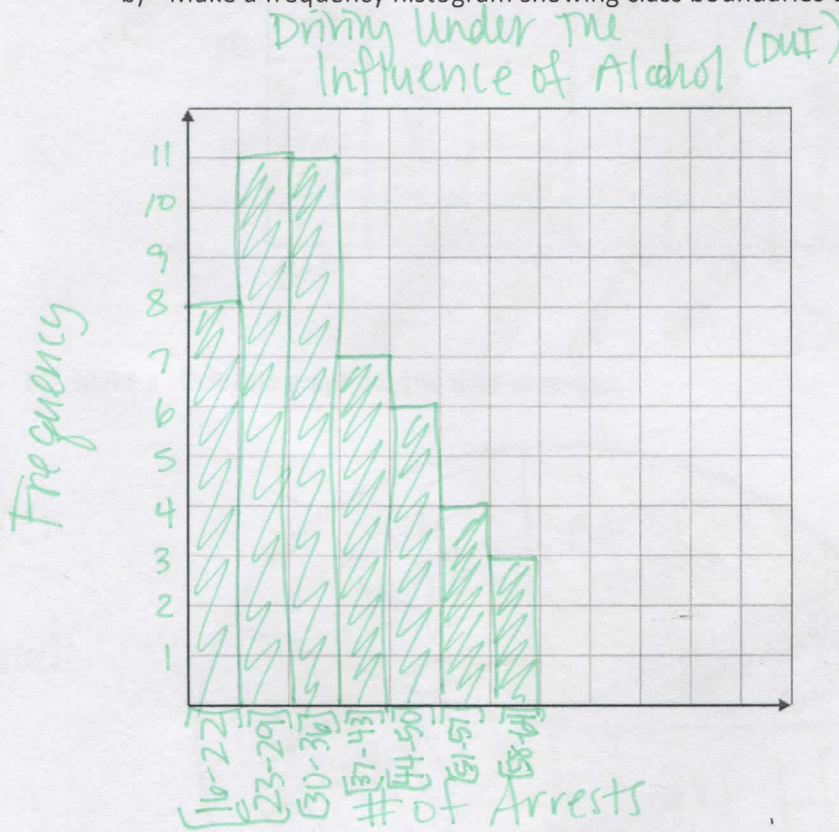
46 16 41 26 22 33 30 22 36 34 63 21  
 26 18 27 24 31 38 26 55 31 47 27 43  
 35 22 64 40 58 20 49 37 53 25 29 32  
 23 49 39 40 24 56 30 51 21 45 27 34  
 47 35

a) Make a stem-and-leaf display of the age distribution. (Should it be split-stem or back-to-back?)

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  1 | 6 8
  2 | 0 1 1 2 2 2 3 4 4 5 6 6 6 7 7 9
  3 | 0 0 1 1 2 3 4 4 5 5 6 7 8 9
  4 | 0 0 1 3 5 6 7 7 9 9
  5 | 1 3 5 6 8
  6 | 3 4
  
```

b) Make a frequency histogram showing class boundaries using seven classes.



$$\frac{64 - 16}{7} \approx 6.857$$

Class width = 7

Class	f
16-22	8
23-29	11
30-36	11
37-43	7
44-50	6
51-57	4
58-64	3

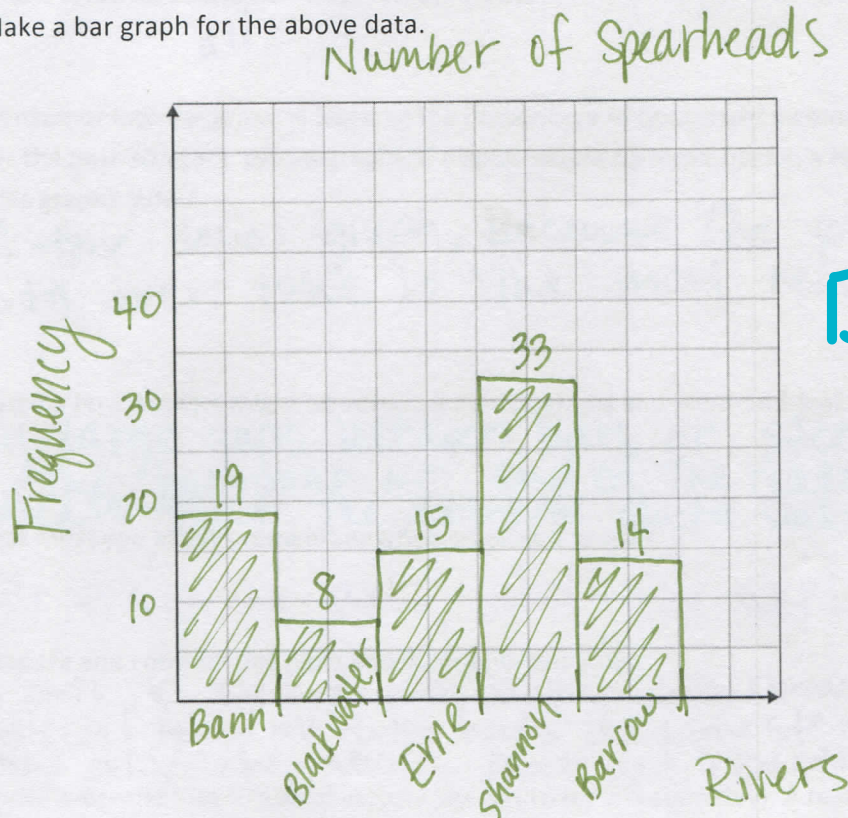
c) Describe the shape of the distributions, outliers, clusters/gaps.

Slightly skewed Right  
 No gaps, clusters, or outliers exist

8. Commercial dredging operations in ancient rivers occasionally uncover archaeological artifacts of great importance. One such artifact is Bronze Age spearheads recovered from ancient rivers in Ireland. A recent study gave the following information regarding discoveries of ancient bronze spearheads in Irish rivers.

River	Bann	Blackwater	Erne	Shannon	Barrow
No. of Spearheads	19	8	15	33	14

- a) Make a bar graph for the above data.



Don't touch bars!

- b) Make a circle/pie graph for the data provided.

Number of Spearheads

