

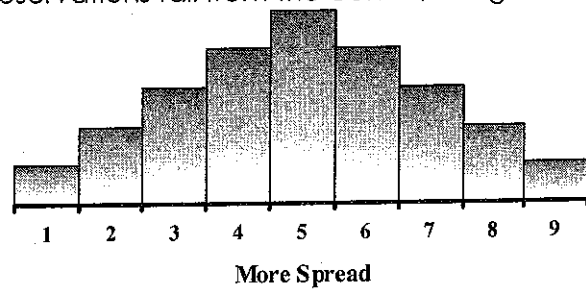
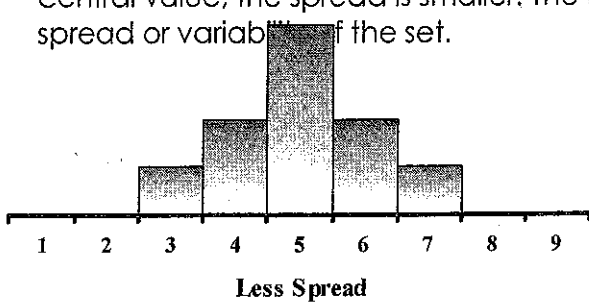
Unit 6 Intro: How to Compare Distributions

When you compare two or more data sets, focus on four features:

- **Center.** Graphically, the center of a distribution is the point where about half of the observations are on either side.
- **Spread.** The spread of a distribution refers to the variability of the data. If the observations cover a wide range, the spread is larger. If the observations are clustered around a single value, the spread is smaller.
- **Shape.** The shape of a distribution is described by symmetry, skewness, number of peaks, etc.
- **Unusual features.** Unusual features refer to gaps (areas of the distribution where there are no observations) and outliers.

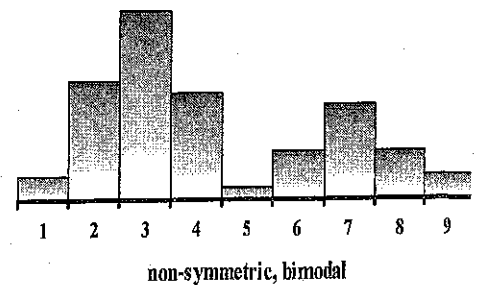
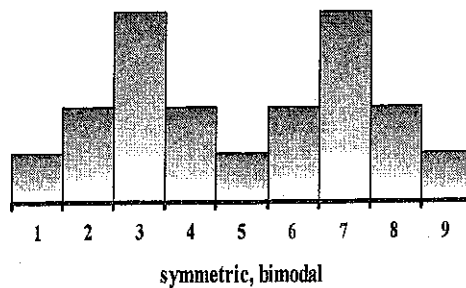
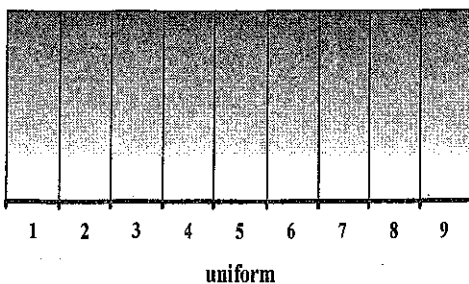
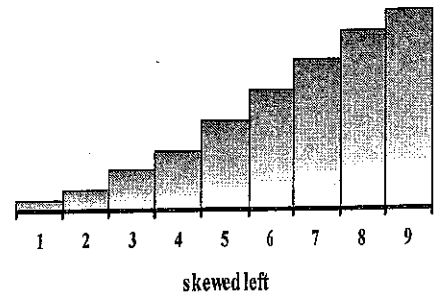
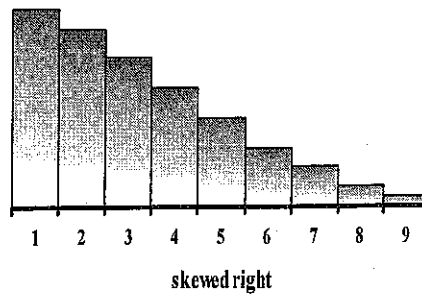
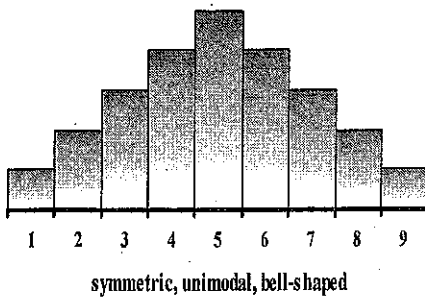
SPREAD

The spread of a distribution refers to the variability of the data. If the data cluster around a single central value, the spread is smaller. The further the observations fall from the center, the greater the spread or variability of the set.



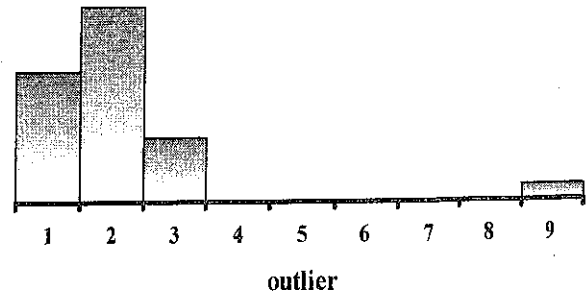
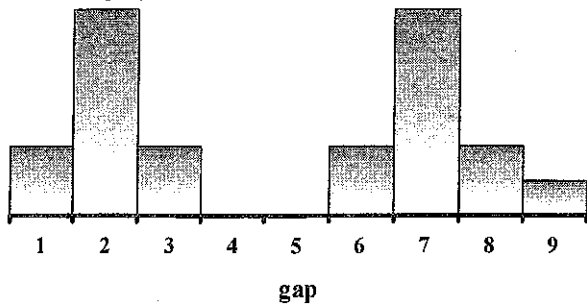
SHAPE

The shape of a distribution is described by symmetry, number of peaks, direction of skew, or uniformity



UNUSUAL FEATURES

Sometimes, statisticians refer to unusual features in a set of data. The two most common unusual features are gaps and outliers.



Practice Problems:

What shape would the following situations have?

- 1.) A really hard test?
- 2.) A really easy test?
- 3.) Results of rolling a 6 sided die 1000 times?
- 4.) Height of students?
- 5.) Combined heights of male and female students?

* If there is an outlier,
the best measure of center
is the _____.

7.2 HW

1. For the following data, calculate the desired information. Then, create box-and-whisker plot

19, 27, 19, 24, 21, 20, 23, 29, 25, 26, 33

Median:

Lower Quartile:

Upper Quartile:

Lower Extreme:

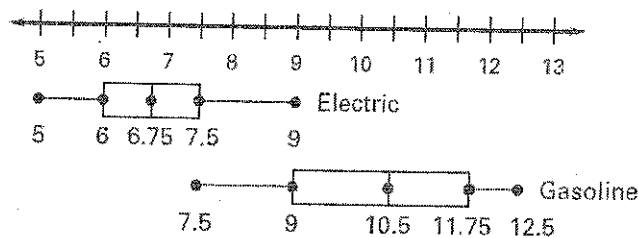
Upper Extreme:

Range:

Interquartile Range:



2. The box-and-whisker plots show the weights of electric handheld power blowers and gasoline handheld power blowers.



a) **Compare** the median, range, and interquartile range for the two types of blowers

