Name: _____   Date: _____   Class: _____

Mean vs Median vs Mode

What is the best measure of central tendency?

There is no one "best" measure of central tendency, but is often better than another. The most

representative measure of central tendency will depend on the _____,

_____, and _____from your data.

and what you are _____ from your data.

When is the mean the best measure of central tendency?

The _____ is usually the best measure of central tendency because it analyzes

_____ in your set. However, because of this, the mean has one main

disadvantage: it is particularly susceptible to the _____.

These are values that are unusually _____.

 For example, consider the two data sets below:
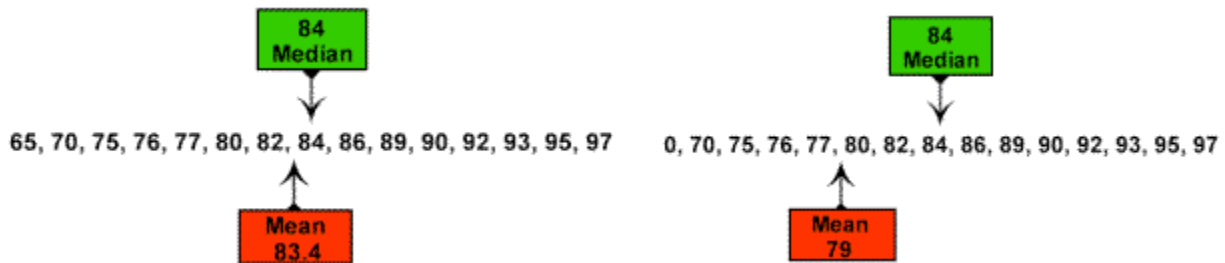
The set on the right shows what would happen if one of the scores was WAY out of range in regard to

the other scores. Such a term is called an _____.

        Without the outlier, _____.

        With the outlier, _____.

What is the most appropriate measure of central tendency when the data has outliers?

The _____ is usually preferred in situations where your data is skewed from outliers because

the value of the mean can be _____. However, it will

depend on how _____ the outliers are. If they _____ significantly distort the

mean, using the mean as the measure of central tendency will usually be preferred.

When is the mode the best measure of central tendency?

The mode is the _____ used of the measures of central tendency. The mode is often used when dealing with _____. The mean and/or median are usually preferred when dealing with all other types of data, but this does not mean it is never used with these data types.

> Graphs like histograms, boxplots, and dotplots are useful in visualizing data's central tendency and can assist in deciding which central tendency statistic is most appropriate for a given data set.
>
> In a data set that has few outliers, the data is not skewed and the mean is the best measure of center.
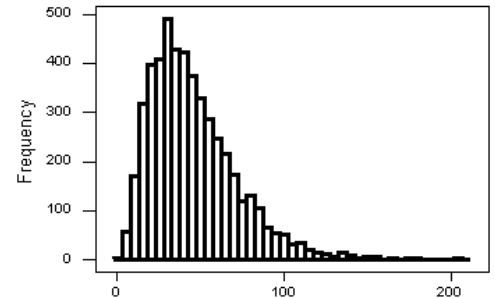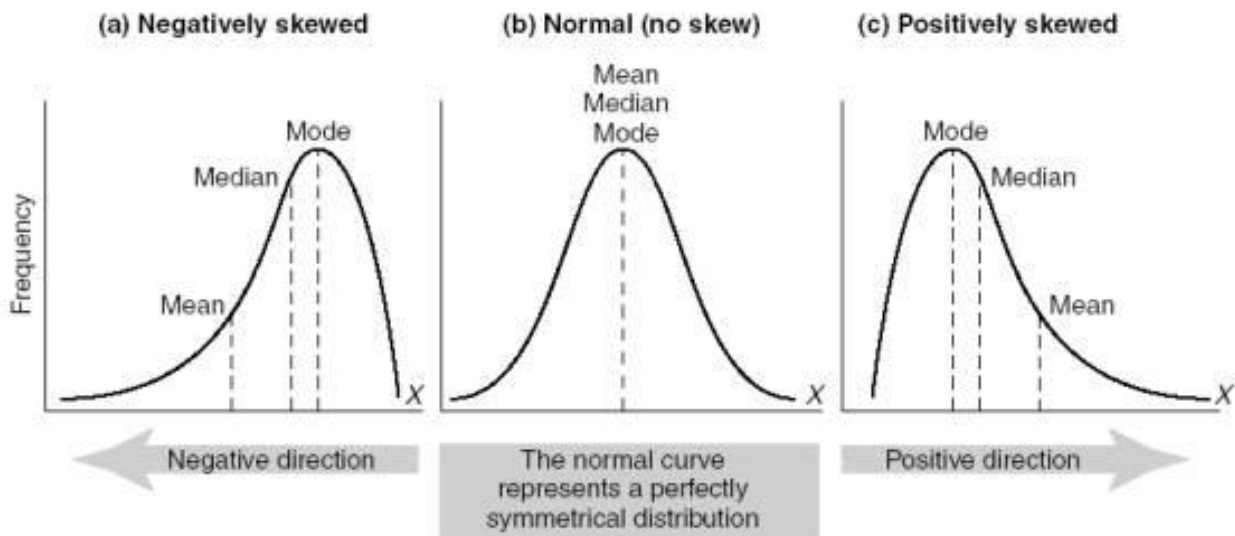
Skewed-Left Distribution
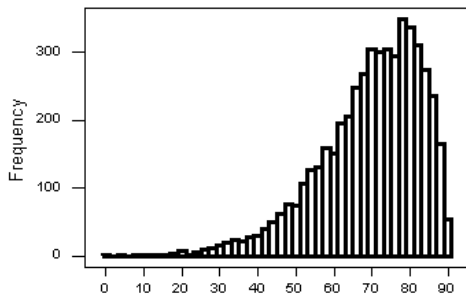
Symmetric, Single-peaked (Unimodal) Distributi
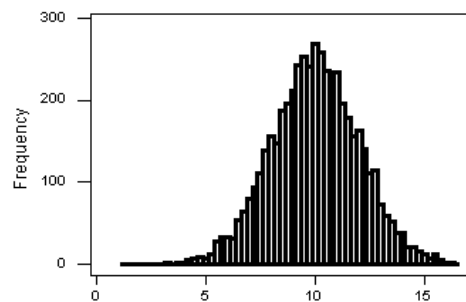
Skewed-Right Distribution

> As extreme data is introduced to the sample, the mean begins to be influenced and pulled in positive and negative directions. In this example, the reference lines (from left to right) represent the median, trimmed mean, and mean. In this case, the median is most appropriate measure of center.

(a) Negatively skewed

Mode
Median
Mean

Negative direction

(b) Normal (no skew)

Mean
Median
Mode

The normal curve represents a perfectly symmetrical distribution

(c) Positively skewed

Mode
Median
Mean

Positive direction

MEDIAN
Use the median to describe the middle of a set of data that *does* have an outlier.

Advantages:
-
-
-

Disadvantages:
-

MEAN
Use the mean to describe the middle of a set of data that *does not* have an outlier.

Advantages:
-
-
-

Disadvantages:
-

MODE
Use the mode when the data is non-numeric or when asked to choose the most popular item.

Advantages:
-

Disadvantages:

-
-
-
-