Lecture 3:

I) Measures of Central Tendency

A) Mean, of a set of measurements is defined to be the sum of the measurements divided by the total number of measurements.

B) Median, of a set of measurements is defined to be the middle value when the measurements are arranged in order of magnitude.

C) Mode, of a set of measurements is defined as the measurement that occurs most often (with highest frequency).

Mean ($\bar{X}$)

A) In terms of formula:

$$\frac{\sum X_i}{N} \quad \frac{\sum fX_i}{N} \quad \frac{\sum fX_{mid}}{N}$$

Raw \hspace{1cm} Simple Frequency \hspace{1cm} Grouped Frequency

B) Important Properties of the Mean

$$\sum (X_i - \bar{X}) = 0$$

If the mean of a distribution is subtracted from each score in that distribution and the difference are added, the sum of will be zero

$$\sum (X_i - \bar{X})^2 = \text{Minimum}$$

The mean is defined as the point about which the sum of the square deviations is minimize.