**MEASUREMENT OF CENTRAL TENDENCY OR AVERAGES.**

In the earlier chapters we studied the concept about the presentation of data deal a group of data by using statistical techniques, classification, frequency distribution and graphical methods. But this is not enough for us, sometimes we compare two or more than two sets of data, we summarized the data groups in a single value, such a value is in the center and representing the entire set of data this is called the central tendency and the measurement of such value is called measurement of central tendency.

Since measurement of central tendency indicates the location or general position of the distribution. It is also called measurement of location or position.

Some of the points must be kept in mind when calculating Measurement of central tendency:

1. The result of measurement of central tendency should be in Range of data.
2. By ordering the data the result is same.

**Criteria of satisfactory average:**

Good average possesses the following characteristics:

1. Good average can be defined easily.
2. It based on all the observations made.
3. Good average is simple to understand and easy to calculate.
4. It gives you a quick response in a very short time.
5. Good average is relatively stable and repeated sampling.
6. Good average is not affected by large or small observation.
7. A mathematical treatment is easy to understand and calculate.

Several types of averages are defined to measure the representative or central value. Some of them are discussed below:

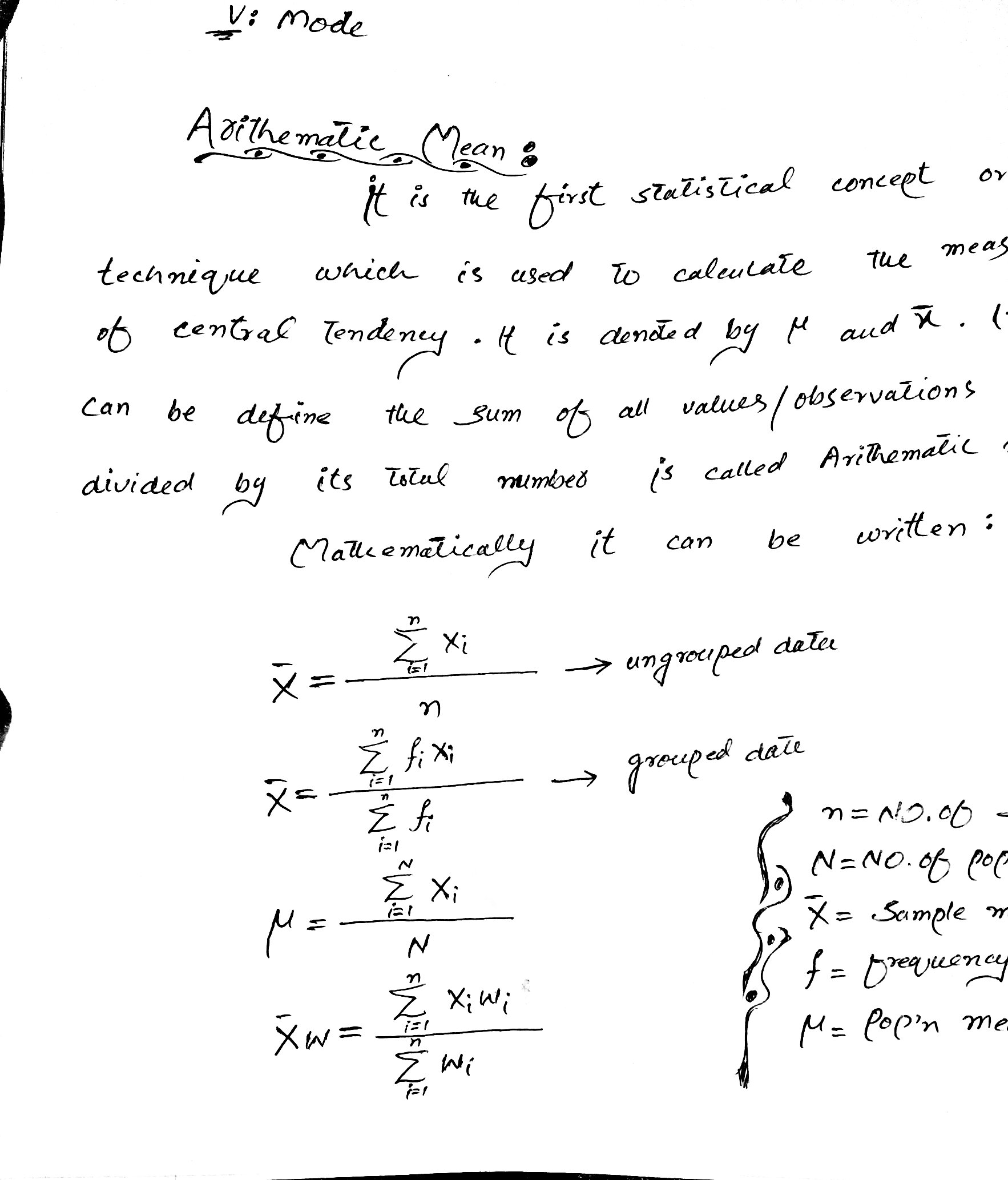
**Types of Averages:**

The most common types of averages are:

1. Arithmetic mean.
2. Geometric mean.
3. Harmonic mean.
4. Median
5. Mode.

**Arithmetic Mean:**

It is the first statistical concept or technique which is used to calculate the measurement of central tendency. It is denoted by . it can be define the sum of all values / observations divided by its total number is called arithmetic mean.

Mathematically it can be written as:

(for Ungrouped data)

(For grouped data)

Where:

n= no of sample

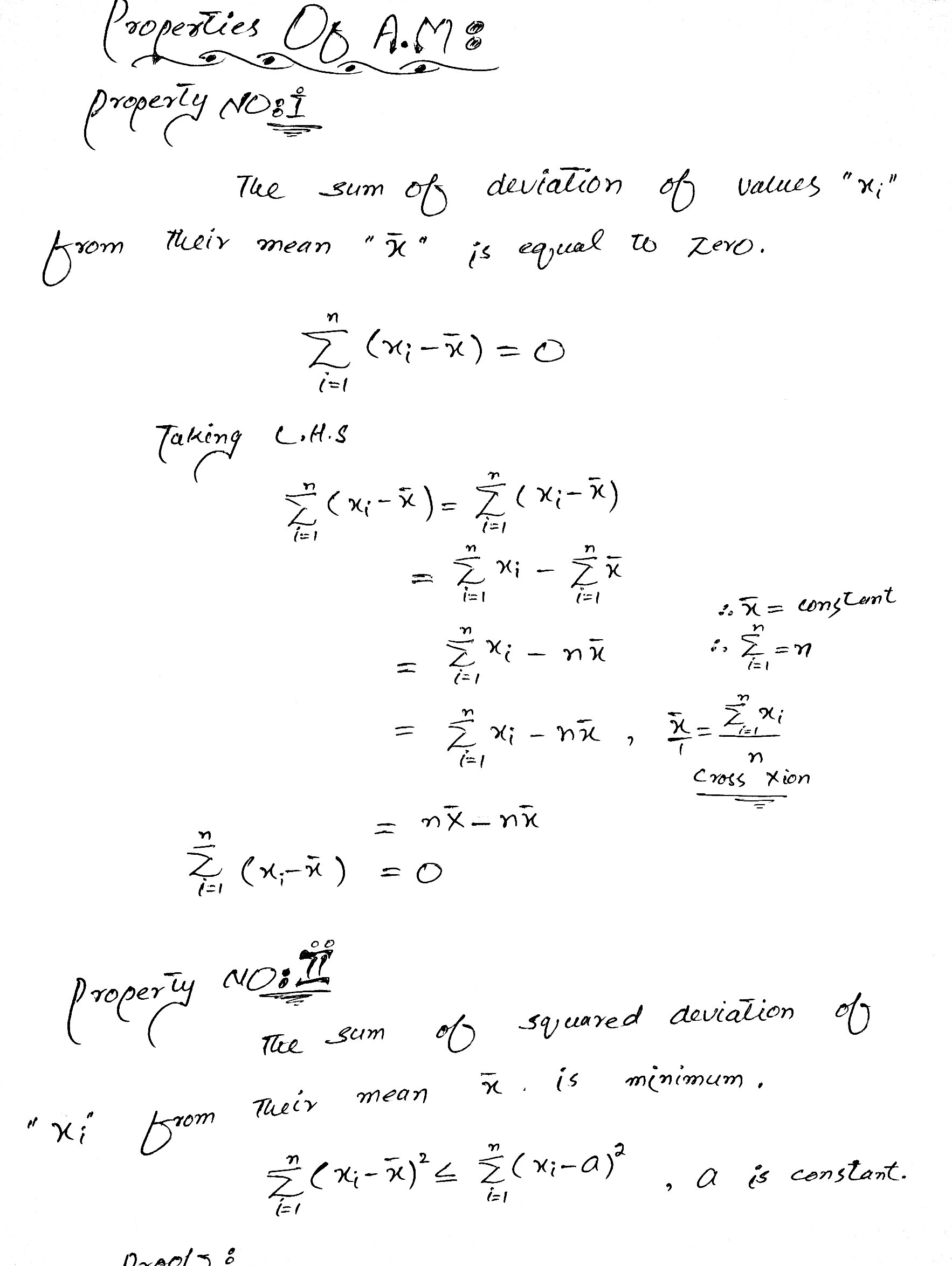
N = no of population values.

= sample mean.

µ= population mean.

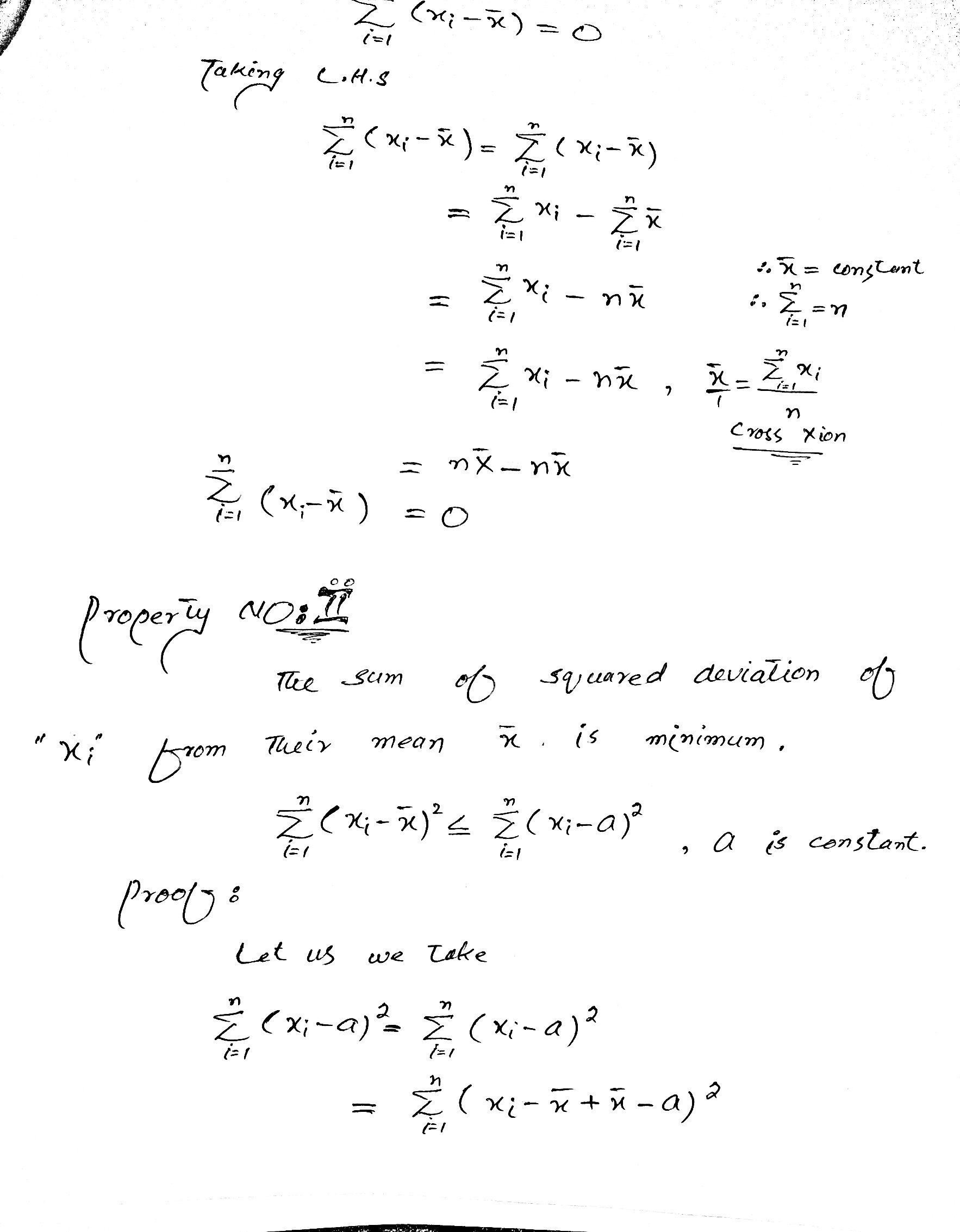
**Properties of Arithmetic mean:**

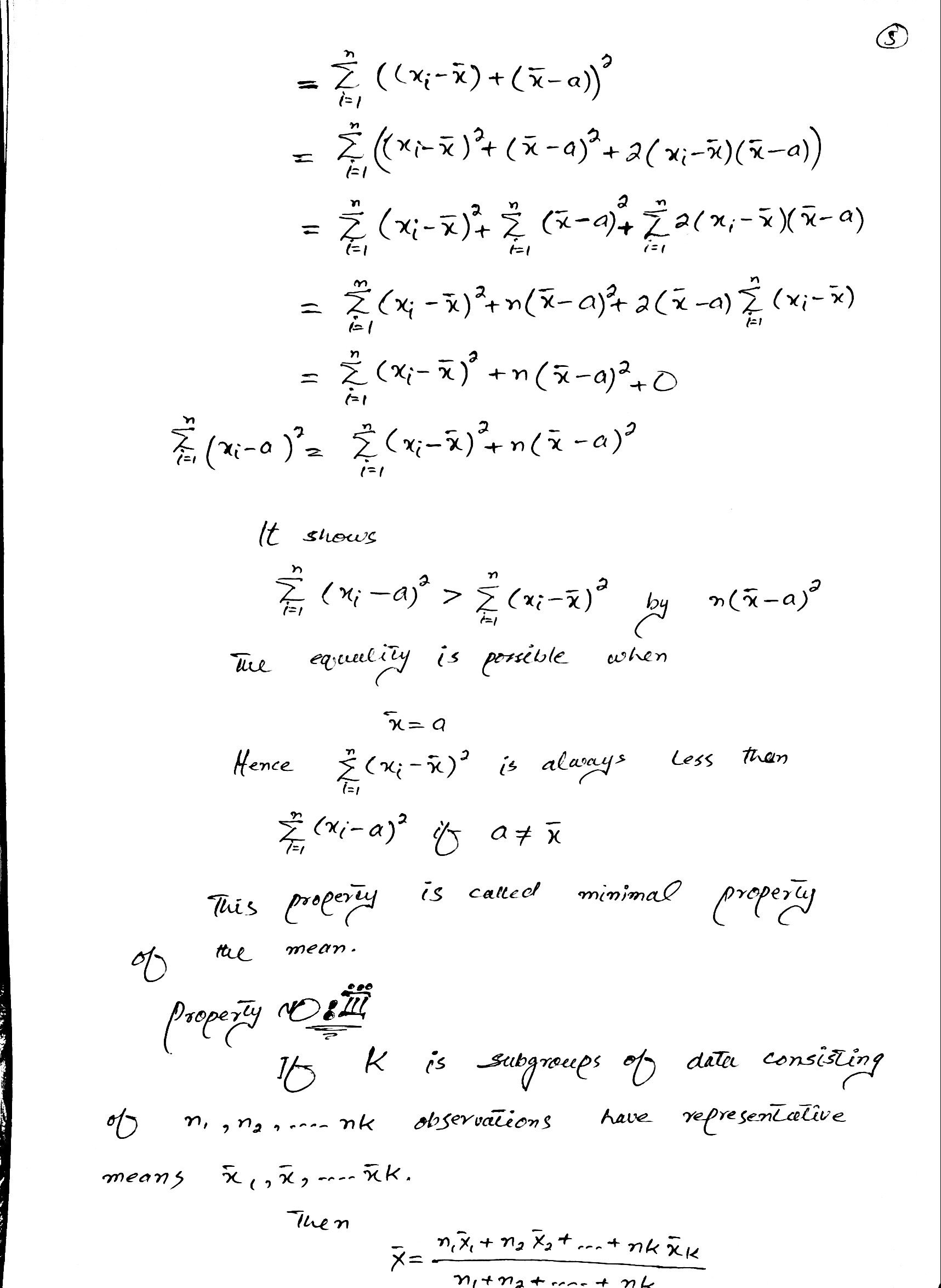
1. **Property No.1:**

The sum of deviation of values “Xi” from their mean “” is equal to zero.

1. **Property No.2**

The sum of squared deviation of “Xi” from their mean is minimum.





This Property is called minimal Property of the mean.