Task 1

Mean: is the average of a data set

$$\text{mean} = \overline{x} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Median: is the middle of the set of numbers, If the size of the data set *n* is odd the median is the value at position *p* where:

$$p = \frac{n+1}{2}$$

$$\tilde{x} = x_p$$

If *n* is even the median is the average of the values at positions *p* and *p* + 1 where:

$$p = \frac{n}{2}$$

$$\tilde{x} = \frac{x_p + x_{p+1}}{2}$$

Mode: Mode is the value or values in the data set that occur most frequently.

For the data set **1**, **1**, 2, 5, **6**, **6**, 9 the mode is 1 and 6.

Variance: statistical measurement of the spread between numbers in a data set. More specifically, variance measures how far each number in the set is from the mean and thus from every other number in the set.

$$\frac{\sum_{i=1}^{n} (x_i - \overline{x})^2}{n-1}$$

Standard deviation: The Standard Deviation is a measure of how spread-out numbers are.

The formula is the square root of the Variance.

$$\sqrt{\frac{\sum_{i=1}^{n} (x_i - \overline{x})^2}{n-1}}$$

Gaussian distribution: is a bell-shaped curve, and it is assumed that during any measurement values will follow a normal distribution with an equal number of measurements above and below the mean value.