1. **Define mean, median and range**

**Mean**, or average, is a statistical description of a data set, which can be obtained by adding together all the values in the set and dividing that sum over the number of elements in that set.

**Median** is a statistical description of a data set, which can be understood as the value which separates the bigger half and the lower one of a data set. This value can be obtained by sorting the data set and choosing the value in the exact middle. If the number of elements is an even number, the median value will be the mean of two values closest to the middle.

**Range** is the difference between the highest value and the lowest one in a data set.

1. **Define standard deviation and variance**

**Standard deviation** is a statistic which demonstrates how spread out the data set is from its mean. Standard deviation can be obtained by taking the square root of variance.

**Variance** is a statistic which describes how spread out the values are from the mean of the data set. This can be obtained by taking the mean of squared difference (squared deviation) of each value from the mean.

1. **What is sample and what is population?**

**Population** is a set of elements (not necessarily people) which share some features of interest for some questions or experiments.

**Sample** is a collection of items selected from the above-mentioned statistical population, i.e. a subset of the population

1. **What is interquartile range?**

**Interquartile range** is a range which contains 50% of the elements in the middle of a sorted data set, or in other words, from 25th to the 75th percentiles.

1. **What is histogram?**

**A histogram** is a type of chart which describes the distribution of a data set, i.e. how many elements of the same value or value range are present in this data set. It typically comes under the format of a line chart or a bar chart in which each bar represents a bin of value range.

1. **What is bias in statistics?**

**Bias** in statistics is the difference between the value estimated by evaluating a sample and that actual value of a population. For example, a research which studies the population of only Western developed countries concludes that the global average life expectancy is very high while the actual figure is much lower than that because there are some countries which have much lower average lifespan since they are suffering from famine or war. In this case, the conclusion from the above-mentioned study is **biased**.

1. **What is a statistical distribution? What is the most common one?**

**A statistical distribution** is the relative numbers of times each value appears in a data set. The most common statistical distribution is a normal distribution, which has the shape of a bell curve.

1. **What is the difference between discrete and continous distribution?**

**A discrete distribution** is a type of data distribution in which each data point can only take certain values, whereas in a **continuous distribution**, each value can take any values within a specified or infinite range. An example of discrete distribution is a class of students, some of them pass a course and the other fail. An example of a continuous distribution can be the net sale of a company in a year, which can be of any numerical values.