**1. What is a hypothesis?**

In statistics, a hypothesis is a statement about a population, usually claiming that a parameter takes a particular numerical value or falls in a certain range of values.

**2. What is the Central Limit Theorem? Explain it. Why is it important?**

The Central Limit Theorem states that as the sample size gets larger the sampling distribution of the sample means approaches a normal distribution — no matter the shape of the population distribution. This fact holds especially true if the sample sizes (n) over 30. Because statisticians have found that for many population distributions, a sample size of at least 30 is “large enough.” The Central Limit Theorem is important for statistics because it allows us to safely assume that the sampling distribution of the mean will be normal in most cases. This means that we can take advantage of statistical techniques that assume a normal distribution, as we will see in the next section.

**3. What is A/B testing?**

A/B testing is a basic randomized control experiment. It is a way to compare the two versions of a variable to find out which performs better in a controlled environment. For instance, let’s say you own a company and want to increase the sales of your product. Here, either you can use random experiments, or you can apply scientific and statistical methods. A/B testing is one of the most prominent and widely used statistical tools.

**4. Define Non-sampling error and sampling error**

A non-sampling error is a statistical term that refers to an error that results during data collection, causing the data to differ from the true values. The sampling error is: "the error that arises as a result of taking a sample from a population rather than using the whole population".

**5. What is Confidence Interval, how do we calculate it?**

In practice, for estimating a population parameter (for example population mean) only one sample is used as the basis. But, taking into consideration the differences among several samples, statisticians have developed the concept of a "confidence interval" which indicates the likelihood that a stated interval with a lower and upper limit properly estimates the parameter.

The confidence interval concept is always used together with the confidence level. The confidence level is expressed as a percentage (for example, a 90%, 95% or 95% confidence level). It means that you should repeat an experiment, 90 percent of the time your results will match the results you get from a population. And the confidence interval is the gap between lower and upper limits.