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1. **What do you understand by hypothesis testing?**

A statistical hypothesis, sometimes called confirmatory data analysis, is a hypothesis that is testable on the basis of observing a process that is modeled via a set of random variables. A statistical hypothesis test is a method of statistical inference.

Or

Hypothesis testing is a statistical method that is used in making statistical decisions using experimental data.  Hypothesis Testing is basically an assumption that we make about the population parameter.

1. **Differentiate between the classical and the P value approach for hypothesis testing.**

**Classical Approach**

The Classical Approach to hypothesis testing is to compare a test statistics and a critical value. It is the best used for distributions which gives areas and require to look up the critical value rather than distributions which look up a test statistic to find an area.

**P-Value Approach**

The P-Value Approach, short for Probability Value, approaches hypothesis testing from a different manner. Instead of comparing z-scores or t-scores as in the classical approach, this compares probabilities and areas.

The level of significance (alpha) is the area in the critical region. That is, the area in the tail of the right or left of the critical values.

The p-value is the area to the right or left of the test statistic. If it is a two tail test, then look up the probability in one tail and double it. If the test statistics is in the critical region, then the p-value will be less than the level of significance. It does not matter whether it is a left tail, right tail, or two tail test. This rule always holds.

1. **What is the importance of hypothesis testing in research**

According to the San Jose State University Statistics Department, hypothesis testing is one of the most important concepts in statistics because it is how you decide if something really happened, or if certain treatments have positive effects, or if groups differ from each other or if one variable predicts another. In short, you want to proof if your data is statistically significant and unlikely to have occurred by chance alone. In essence then, a hypothesis test is a test of significance.The importance of hypothesis testing is to assist administrators, clinicians and researchers in making wise decisions which usually depends on the statistical decision.