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1) What do you understand by hypothesis testing.

Hypothesis testing was introduced by Ronald Fisher, Jerzy Neyman, Karl Pearson and Pearson’s son, Egon Pearson. 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

Hypothesis testing is used to assess the plausibility of a hypothesis by using sample data. Such data may come from a larger population, or from a data-generating process. The word "population" will be used for both of these cases in the following descriptions.

2) Differentiate between the classical and p-value approach for hypothesis testing.

The Classical Approach to hypothesis testing is to compare a test statistic and a critical value. The Classical Approach also has three different decision rules, depending on whether it is a left tail, right tail, or two tail test. One problem with the Classical Approach is that if a different level of significance is desired, a different critical value must be read from the table.

## While

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, you're comparing probabilities, or areas. 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 statistic 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.

3) what is the importance of hypothesis testing in research.

* Hypothesis testing is used in an experiment to define the relationship between two variables.
* It provides objectivity to the research activity.
* The use of hypothesis in quantitative studies tends to induce critical thinking and to facilitate understanding and interpretation of data.
* The purpose of a hypothesis is to find the answer to a question. A formalized hypothesis will force us to think about what results we should look for in an experiment. The first variable is called the independent variable.
* 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.