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## ANSWERS

1. Hypothesis is a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation. Hypothesis testing can be simply defined as a statement about one or more population set up for the purpose of being discredited or approved. In statistics, a method for testing how accurately a mathematical model based on one of set data predicts the nature of other data sets generated by the same process.

2. **Classical Approach**

The Classical Approach is the first approach to hypothesis testing, it computes a test statistics from the empirical data and then makes a comparison with the critical value. It compares 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. It involves determining "likely" or "unlikely" by determining the probability assuming the null hypothesis were true. 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.

3. Research without hypothesis is like a sailor in the sea without compass. Its purpose is indispensable as it always guides and gives direction to specific research, research remains unfocused without a hypothesis. The importance of hypothesis testing is to assist administrators, clinicians and researchers in making wise decisions which usually depends on the statistical decision.