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1. What do you understand by hypothesis testing

Hypothesis testing is a means to test the hypothesis i.e. a statement about one or more populations set up for the purpose of being discredited or approved. It’s to assist administrators, clinicians and researchers in making wise decisions which usually depends on statistical decisions.

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

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| Classical approach | P-value approach |
| The Classical Approach to hypothesis testing is to compare a test statistic and a critical value. It is best used for distributions which give areas and require you to look up the critical value (like the Student's t distribution) rather than distributions which have you look up a test statistic to find an area (like the normal distribution). | 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. |
| 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 | The level of significance (alpha) is the area in the critical region. That is, the area in the tails to the right or left of the critical values. |
| The Classical Approach also has three different decision rules, depending on whether it is a left tail, right tail, or two tail test. | 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 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. |

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

Hypothesis testing is done to help determine if the variation between or among groups of data is due to true variation or if it is the result of sample variation. With the help of sample data we form assumptions about the population, then we have to test our assumptions statistically. It’s also to assist researchers in making wise decisions which usually depends on statistical decisions.