BECKLEY DEBORAH IFEOLUWA

17/MHS05/007

PHYSIOLOGY 300L

STAT 312

ASSIGNMENT

Questions

1. What do you understand by hypothesis testing

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

3. What is the importance of hypothesis testing in Research

SOLUTION

1.Hypothesis testing is an act in statistics whereby an analyst tests an assumption regarding a population parameter. The methodology employed by the analyst depends on the nature of the data used and the reason for the analysis.

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 purpose of hypothesis testing is to assist administrators, clinicians and researchers in making wise decisions which usually depends on the statistical decision.

2.

|  |  |
| --- | --- |
| Classical values | P-values |
| 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 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. |

3. A hypothesis is a theory or proposition set forth as an explanation for the occurrence of some observed phenomenon, asserted either as a provisional conjecture to guide investigation, called a working hypothesis, or accepted as highly probable in lieu of the established facts. A scientific hypothesis can become a theory or ultimately a law of nature if it is proven by repeatable experiments. Hypothesis testing is common in statistics as a method of making decisions using data. In other words, testing a hypothesis is trying to determine if your observation of some phenomenon is likely to have really occurred based on statistics.