

Ap Stats Unit 3 Flashcards PDF

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What is the purpose of a hypothesis in statistics?

The purpose of a hypothesis in statistics is to provide a statement that can be tested and validated through data analysis.

Define a null hypothesis.

A null hypothesis is a statement that there is no effect or no difference, and it serves as the default or starting assumption in statistical testing.

What is an alternative hypothesis?

An alternative hypothesis is a statement that indicates the presence of an effect or a difference, opposing the null hypothesis.

Explain Type I error.

A Type I error occurs when the null hypothesis is rejected when it is actually true.

Explain Type II error.

A Type II error occurs when the null hypothesis is not rejected when it is actually false.

What is a p-value?

A p-value is the probability of obtaining test results at least as extreme as the observed results, assuming that the null hypothesis is true.

What does it mean if a p-value is less than the significance level?

If a p-value is less than the significance level, it indicates that the observed data is statistically significant, leading to the rejection of the null hypothesis.

What is the significance level (alpha)?

The significance level (alpha) is the threshold set by the researcher to determine whether to reject the null hypothesis, commonly set at 0.05.

What is a confidence interval?

A confidence interval is a range of values that is likely to contain the population parameter with a certain level of confidence, typically expressed as a percentage.

What does it mean if a confidence interval does not include the null value?

If a confidence interval does not include the null value, it suggests that the results are statistically significant and that there is likely an effect or difference present.