

type II error. 100% relationship means "P".
Therefore " $1-P$ " is power of the test.

INC

Null and Alternative Hypothesis:

The null hypothesis implies that there is no difference between the sample statistic and the population parameter. To test this we write $H_0: \bar{x} = \mu$ — Null
& $H_1: \bar{x} \neq \mu$ — Alternate

This means,

- ① $\bar{x} > \mu$ or $\bar{x} < \mu$ — Two tailed hypothesis
- ② $H_1: \bar{x} > \mu$ — Alternate ^{right} tailed hypothesis
- OR $H_1: \bar{x} < \mu$ — Alternate left tailed.

Critical Region:

The critical region is the area of sample distribution in which test statistics must fall. This is the region where " H_0 " is rejected on a specified significance level. For example, level of significance is $P=0.05$. This means 5% is alpha error. When test statistics fall into, within 5% for $P=0.05$ the sample distribution covered is called as critical region. Alpha is probability of making error. " $(1-\text{Alpha})$ " is a probability of making correct decision. Critical region is covered by probability of making an error.

Penalty:

Usual type I error is shown in the tail-region (when two tailed it is " $\text{Alpha}/2$ "), on both sides. If the sample statistic, say the sample mean, falls in the shaded (Extremes normal curve) area the hypothesis is