TEMPLATES FOR HYPOTHESIS TESTING

HYPOTHESIS TEST FOR THE MEAN STANDARD DEVIATION KNOWN

$H_0 : \mu =$

$H_1 : \mu \neq, >,$ or $<$

Test Statistic Formula: $z = \dfrac{\bar{x} - \mu}{\sigma / \sqrt{n}}$

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR THE MEAN STANDARD DEVIATION UNKNOWN

$H_0 : \mu =$

$H_1 : \mu \neq, >,$ or $<$

Test Statistic Formula: $t = \dfrac{\bar{x} - \mu}{s/\sqrt{n}}$

Degrees of Freedom: $df = n - 1$

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR TWO MEANS, INDEPENDENT SAMPLES AND STANDARD DEVIATIONS UNKNOWN

$H_0 : \mu_1 = \mu_2$

$H_1 : \mu_1 \neq, >, \text{ or } < \mu_2$

Test Statistic Formula: $t = \dfrac{\bar{x}_1 - \bar{x}_2}{\sqrt{\dfrac{s_1^2}{n_1} + \dfrac{s_2^2}{n_2}}}$

Level of Significance: $\alpha =$.

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR A PROPORTION

$H_0 : p =$

$H_1 : p \neq, >,$ or $<$

Test Statistic Formula: $z = \dfrac{\hat{p} - p}{\sqrt{(pq)/n}}$

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR A LINEAR CORRELATION COEFFICIENT

$H_0 : \rho = 0$

$H_1 : \rho \neq 0$

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR A CONTINGENCY TABLE

H_0 : _____ and _____ are independent

H_1 : _____ and _____ are dependent

Test Statistic Formula: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Degrees of Freedom: $df = (r-1)(c-1)$

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!

HYPOTHESIS TEST FOR AN ANOVA

$H_0 : \mu_1 = \mu_2 = \ldots = \mu_n$

H_1 : At least one of the means is different

Test Statistic Formula: $F = \dfrac{\text{variance between samples}}{\text{variance within samples}} = \dfrac{MS(\text{factor})}{MS(\text{error})}$

Numerator Degrees of Freedom: $ndf = \#$ of samples minus 1

Denominator Degrees of Freedom: $ddf = \#$ of data elements minus # of samples

Level of Significance: $\alpha =$

P-Value: $P =$

Decision: Accept/Reject H_0 (Fail to reject H_0)

If the P is low, the null must go!