­­Inference Formulas and Conditions Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Situation: | Confidence Interval: | Significance Test: | Conditions |
| 1 Proportion |  |  |  |
| 2 Proportion |  |  |  |
| 1 Mean, sigma known |  |  |  |
| 1 Mean with sigma unknown |  |  |  |
| 2 means in matched pairs, not independent samples |  |  |  |
| 2 means, independent samples |  |  |  |

Bivariate? (Association of 2 quantitative variables)

No

No

No

Categorical?

Percent (%) (amount/total)?

t-distribution(μ)

z-distribution(μ)

Chi-Square Test(χ2) (counts)

***1 – Sample mean z-Interval***

***1-Sample mean z-test***

Yes

No, matched

One

One

***1 – Prop. z-test***

***1 – Prop. z-Interval***

***1 – Sample mean t-Interval***

***1-Sample mean t-test***

***Paired Difference t-Interval***

***Paired Difference t-Test***

***2 – Sample mean t-Interval***

***2-Sample mean t-test***

Two

How many samples?

How many samples?

z-distribution for Proportions (p) (Binomials)

Do you know σ? (you will rarely)

Fit

Many

One

***Linear Regression t-Test***

***change % to count!***

***Prediction Interval for y*v**

***Confidence Interval for* β*, μv***

Yes

No

Go Back & Check!

No

Yes

Test for independence of categories?

χ2 ***Test for Independence Ho: No Relationship***

χ2 ***Test for Homogeneity: Ho: No Difference***

χ2 ***Test for Goodness of fit Ho: No Difference***

Yes

How many independent samples?

Two

One

How many categorical variables?

***2 – Prop. z-Interval***

How many independent samples?

Inference

***2 – Prop. z-test***

One

Are the samples independent?

Two

t-distribution for Linear Regression: Slope(β)

Yes (i.e. counts)

Proportion Inference OR Checking fit to sample?

Yes

Yes

Yes

No

Means?