For A Confidence Interval Of A Population Mean

We will construct a ___% confidence interval for μ, the mean ___________.

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

If $n < 30$, check the plots to verify whether X, seems to follow a normal distribution.

If $n > 30$, the CLT states the sampling distribution of $\bar{X}$ is approximately normal.

Assume that $n < 1/10$ N.

The TI-84 T-Interval is (____, ____).

We are ___% confident that the mean _________________ is in this interval.

For A Test Of A Population Mean

We will test whether μ, the mean ______ is (greater than, less than, different from) _____(μ_0).

$$H_0: \mu=\mu_0 \text{ vs } H_A: \mu >, <, \neq\mu_0$$

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

If $n < 30$, check the plots to verify whether X, seems to follow a normal distribution.

If $n > 30$, the CLT states the sampling distribution of $\bar{X}$ is approximately normal.

Assume that $n < 1/10$ N.

The TI-84 T-Test gives t = ___, df = ___, p-value = _____

This (low or high) p-value (indicates or does not indicate) evidence against H_0. That is is we (do do not)have evidence against the claim that the mean ______ is (greater than, less than, different from) _____(μ_0).

For A Confidence Interval Of A Difference Of Population Means

We will construct a ___% confidence interval for $\mu_1-\mu_2$, the difference between μ_1, the mean __________, and μ_2, the mean ____________.

We assume that our samples are independent SRS's. (Or that subjects were randomly assigned to treatment.)

If $n_1+n_2 < 30$, check the plots of both samples to verify whether X_1 and X_2, seem to follow a normal distribution.

If $n_1+n_2 > 30$, the CLT states the sampling distribution of $\bar{X}_1-\bar{X}_2$ is approximately normal.

Assume that n_1 and $n_2 < 1/10$ N_1 and N_2 respectively.

The TI-84 2-SampT-Interval is (____, ____).

We are ___% confident that the difference between the mean ______________ and the mean ________is in this interval.

For A Test Of A Difference Of Population Means

We will test whether μ_1 , the mean __________is (greater than, less than, different from) μ_2 , the mean ____________.

We assume that our samples are independent SRS's. (Or that subjects were randomly assigned to treatment.)

If n_1+n_2 < 30, check the plots of both samples to verify whether X_1 and X_2 , seem to follow a normal distribution.

If n_1+n_2 > 30 , the CLT states the sampling distribution of $\bar{X}_1-\bar{X}_2$ is approximately normal.

Assume that n_1 and n_2 < 1/10 N_1 and N_2 respectively .

The TI-84 2-SampT-Test is gives t = ___, df = ___, p-value = ___

This (low or high) p-value (indicates or does not indicate) evidence against H_0 . That is is we (do do not)have evidence against the claim that the mean ______ is (greater than, less than, different from) the mean ______.

For A Confidence Interval Of A Population Proportion

We will construct a ___% confidence interval for p, the proportion of ___________.

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

If $n\hat{p}$ and $n\hat{q}$ >10, the CLT states the sampling distribution of $\hat{p}$ is approximately normal.

Assume that n < 1/10 N.

The TI-84 1-PropZ-Interval is (____, ____).

We are ___% confident that the proportion of _________________ is in this interval.

For A Test Of A Population Proportion

We will test whether p, the proportion of ______ is (greater than, less than, different from) _____(p_0).

$$H_0:\ p=p_0 \ \text{vs}\ H_A:\ p >, <, \neq p_0$$

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

If $n\hat{p}$ and $n\hat{q}$ >10, the CLT states the sampling distribution of $\hat{p}$ is approximately normal.

Assume that n < 1/10 N.

The TI-84 1-PropZTest gives z = ___, p-value = _____

This (low or high) p-value (indicates or does not indicate) evidence against H_0 . That is is we (do do not)have evidence against the claim that the proportion of ______ is (greater than, less than, different from) _____.

For A Confidence Interval Of A Difference Population Proportions

We will construct a ___% confidence interval for $p_1 - p_2$, the difference between p_1, the proportion of __________, and p_2, the proportion of ____________.

We assume that our samples are independent SRS's. (Or that subjects were randomly assigned to treatment.)

If $n_1\hat{p}_{1,}\ n_1\hat{q}_{1,}\ n_2\hat{p}_{2,}\ n_2\hat{q}_{2,} > 5$ the CLT states that the sampling distribution of $\hat{p}_1 - \hat{p}_2$ is approximately normal

Assume that n_1 and n_2 < 1/10 N_1 and N_2 respectively .

The TI-84 2-Prop Z Interval is (____, ____).

We are ___% confident that the difference between the proporton of ______________ and the proportion of ________is in this interval.

For A Test Of A Difference Of Population Proportions

We will test whether p_1, the proportion of __________is (greater than, less than, different from) p_2, the proportion of ____________.

We assume that our samples are independent SRS's. (Or that subjects were randomly assigned to treatment.)

If $n_1\hat{p}_{1,}\ n_1\hat{q}_{1,}\ n_2\hat{p}_{2,}\ n_2\hat{q}_{2,} > 5$ the CLT states that the sampling distribution of $\hat{p}_1 - \hat{p}_2$ is approximately normal

Assume that n_1 and n_2 < 1/10 N_1 and N_2 respectively .

The TI-84 2-PropZTest is gives z = ___, p-value = ___

This (low or high) p-value (indicates or does not indicate) evidence against H_0 . That is is we (do do not)have evidence against the claim that the proportion of ______ is (greater than, less than, different from) the proportion of ______.

The Chi-Square Goodness of Fit Test

We will test whether the proposed distribution of proportions is a good fit for our data.

H_0: $p_1 =$ ___ , $p_2 =$ ___ , $\cdots$

H_A: At least one of these proportions is different

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

Verify that most all expected counts > 5

$X^2 =$ ___ , $df =$ ___ , $p-value =$ ___

This (low or high) p-value (indicates or does not indicate) evidence against H_0 . That is we (do do not) have significant evidence that the proportions are as indicated above.

The Chi-Square Test of Homogeneity (of Populations)

We will test whether the proportions of ____________ are the same for each population of ___________.

H_0: $p_1 = p_2 = p_3 = \cdots$
H_A: These proportions are not all the same

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

Verify that most all expected counts > 5

The TI-84 X^2 test gives: $X^2 =$ ___, $df =$ ___, $p - value =$ ___

This (low or high) p-value (indicates or does not indicate) evidence against H_0. That is we (do do not) have significant evidence that the proportions of ____________ are the same for each population of ___________.

The Chi-Square Test of Association (or Independence) (of Variables)

We will test whether there is an association between "(Variable 1)" and "(Variable 2)".

H_0: There is no association between '___' and '___'(or '___' and '___' are independent.)
H_A: There is an association (Or the variables are dependent.)

We assume that our sample is an SRS. (Or that subjects were randomly assigned to treatment.)

Verify that most all expected counts > 5

The TI-84 X^2 test gives: $X^2 =$ ___, $df =$ ___, $p - value =$ ___

This (low or high) p-value (indicates or does not indicate) evidence against H_0. That is we (do do not) have significant evidence that there is an association between "___" and "___".

For a Confidence Interval of the Slope of a "True" Regression Line

We will construct a ___% confidence interval for , β the slope of the true regression line that relates y (response variable) to x (explanatory variable).

We assume that for fixed values of x (explanatory variable) the independently sampled residuals are normally distributed about $\mu_{\hat{y}}$ and that the variance about $\mu_{\hat{y}}$ is the same for all values of (explanatory variable).

If the regression model is $\hat{y} = a + bx$

The __% C.I. is $b \pm t^*(n-2)_{df}(\mathrm{S.E.}_b)$

We are __% confident that the slope of the line relating x to y is in this interval.

<u>For a Test of a Slope of a Regression Line (or Test of Linear Association Between Two Numerical Variables)</u>
We will test whether β , the slope of the line relating *x* (explantory) to *y* (response) is (greater than, less than, different from) _____(β_0).

$$H_0:\ \beta=\beta_0 \ \text{ vs } \ H_A:\ \beta >, <, \neq \beta_0$$

Check the same conditions as in the Confidence Interval for Slope

The TI-84 LinReg T-Test gives: t = ___, *p*-value = ___.

This (low or high) p-value (indicates or does not indicate) evidence against H_0 . That is is we (<u>do</u> <u>do not</u>)have evidence against the claim that the slope of the line relating *x* (explantory) to *y* (response) is (greater than, less than, different from) _____(β_0).

Alternative conclusion (When $\beta_0=0$): That is is we (<u>do</u> <u>do not</u>)have evidence against the claim that *x* (explantory) and *y* (response) are independent.