

## INFERENCE GUIDE - FILL IN

### CONFIDENCE INTERVALS

**IDENTIFY:** Identify the \_\_\_\_\_ and the \_\_\_\_\_.

**CHOOSE:** Choose and name the appropriate interval.

**CHECK:** Check that conditions for the procedure are met.

**CALCULATE:**

**CI:**

$df$  = (if applicable)  
( \_\_\_\_\_, \_\_\_\_\_ )

**CONCLUDE:**

We are C%

We have evidence that [...], because [...]. OR  
We do not have evidence that [...], because [...].

### HYPOTHESIS TESTS

**IDENTIFY:** Identify the \_\_\_\_\_ and the \_\_\_\_\_.

**CHOOSE:** Choose and name the appropriate test.

**CHECK:** Check that conditions for the procedure are met.

**CALCULATE:**

**standardized test statistic** =

$df$  = (if applicable)  
p-value =

**CONCLUDE:**

p-value <  $\alpha$ ,

OR

p-value >  $\alpha$ ,

#### When the parameter is: **a single proportion $p$**

**CHOOSE:** \_\_\_\_\_ to estimate  $p$ , or  
\_\_\_\_\_ to test  $H_0$ :

**CHECK:**

**CALCULATE:** ( \_\_\_\_\_ or \_\_\_\_\_ )

**point estimate:**

**SE of estimate:**

for CI, use \_\_\_\_\_ ; for Test, use \_\_\_\_\_

#### When the parameter is: **a difference of proportions $p_1 - p_2$**

**CHOOSE:** \_\_\_\_\_ to estimate  $p_1 - p_2$ , or  
\_\_\_\_\_ to test  $H_0$ :

**CHECK:**

**CALCULATE:** ( \_\_\_\_\_ or \_\_\_\_\_ )

**point estimate:**

**SE of estimate:**

for CI, use \_\_\_\_\_ ; for Test, use \_\_\_\_\_

#### When the parameter is: **a single mean $\mu$**

**CHOOSE:** \_\_\_\_\_ to estimate  $\mu$ , or  
\_\_\_\_\_ to test  $H_0$ :

**CHECK:**

**CALCULATE:** ( \_\_\_\_\_ or \_\_\_\_\_ )

**point estimate:**

**SE of estimate:**

$df$  =

#### When the parameter is: **a difference of means $\mu_1 - \mu_2$**

**CHOOSE:** \_\_\_\_\_ to estimate  $\mu_1 - \mu_2$ , or  
\_\_\_\_\_ to test  $H_0$ :

**CHECK:**

**CALCULATE:** ( \_\_\_\_\_ or \_\_\_\_\_ )

**point estimate:**

**SE of estimate:**

$df$  =

When the parameter is: **a mean of differences  $\mu_{diff}$**

CHOOSE: to estimate  $\mu_{diff}$ , or  
to test  $H_0$ :

CHECK:

CALCULATE: ( or )

point estimate:

SE of estimate:

df =

When the parameter is: **the slope of a regression line  $\beta_1$**

CHOOSE: to estimate  $\beta_1$ , or  
to test  $H_0$ :

CHECK:

CALCULATE: ( or )

point estimate:

SE of estimate:

df =

**The  $\chi^2$  tests for categorical variables: chi-square statistic =**

When comparing the distribution of **one categorical variable to a fixed/specified population distribution**

CHOOSE:

CHECK:

To calculate expected counts for each category...

CALCULATE: ( )

$\chi^2 =$   
df =

When comparing the distribution of **a categorical variable across 2 or more populations/treatments**

CHOOSE:

CHECK:

CALCULATE: ( then to find expected counts)

$\chi^2 =$   
df =

When looking for **association or dependence between two categorical variables**

CHOOSE:

CHECK:

CALCULATE: ( then to find expected counts)

$\chi^2 =$   
df =