

# Rubric for Inference

This is the R Markdown outline for running inference, both a hypothesis test and a confidence interval.

## Exploratory data analysis

Use data documentaton (help files, code books, Google, etc.), the `str` command, and other summary functions to understand the data.

```
## Add code here to understand the data.
```

Prepare the data for analysis. [Not always necessary.]

```
## Add code here to prepare the data for analysis.
```

Make tables or plots to explore the data visually.

```
## Add code here to make tables or plots.
```

## Hypotheses

Identify the sample (or samples) and a reasonable population (or populations) of interest.

Please write up your answer here.

Express the null and alternative hypotheses as contextually meaningful full sentences.

$H_0$ : Null hypothesis goes here.

$H_A$ : Alternative hypothesis goes here.

Express the null and alternative hypotheses in symbols.

$H_0$  : *math*

$H_A$  : *math*

## Model

Identify the sampling distribution model.

Please write up your answer here.

Check the relevant conditions to ensure that model assumptions are met.

Please write up your answer here.

## Mechanics

Compute the test statistic.

```
## Add code here to compute the test statistic.
```

Plot the null distribution.

```
## Add code here to plot the null distribution.
```

Calculate the P-value.

```
## Add code here to calculate the P-value.
```

## Conclusion

State the statistical conclusion.

Please write up your answer here.

State (but do not overstate) a contextually meaningful conclusion.

Please write up your answer here.

Identify the possibility of either a Type I or Type II error and state what making such an error means in the context of the hypotheses.

Please write up your answer here.

## **Confidence interval**

### **Conditions**

Please write up your answer here.

### **Calculation**

```
## Add code here to calculate the confidence interval.
```

### **Conclusion**

Please write up your answer here.