# 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 documentation (help files, code books, Google, etc.), View, the str command, and other summary functions to understand the data.**

—————————————— ANSWER ——————————————

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

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

—————————————— ANSWER ——————————————

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

**Make tables or plots to explore the data visually.**

—————————————— ANSWER ——————————————

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

## Hypotheses

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

—————————————— ANSWER ——————————————

Please write up your answer here.

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

————————————————— ANSWER —————————————————

$H_0$ : Null hypothesis goes here.

$H_A$ : Alternative hypothesis goes here.

_____

**Express the null and alternative hypotheses in symbols (when possible).**

————————————————— ANSWER —————————————————

$H_0 : math$

$H_A : math$

_____

## Model

**Identify the sampling distribution model.**

————————————————— ANSWER —————————————————

Please write up your answer here.

_____

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

————————————————— ANSWER —————————————————

Please write up your answer here. (Some conditions may require R code as well.)

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## Mechanics

**Compute and report the test statistic.**

————————————————— ANSWER —————————————————

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

Please write up your answer here.

---

**Plot the null distribution.**

ANSWER

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

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**Calculate and report the P-value.**

ANSWER

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

Please write up your answer here.

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## Conclusion

**State the statistical conclusion.**

ANSWER

Please write up your answer here.

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

ANSWER

Please write up your answer here.

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**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.**

ANSWER

Please write up your answer here.

## Confidence interval

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

Please write up your answer here. (Some conditions may require R code as well.)

**Calculate the confidence interval.**

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

**State (but do not overstate) a contextually meaningful interpretation.**

Please write up your answer here.