Lab 6

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Instructions

Complete the lab tutorial before completing this file. Use the R Markdown version of this file to complete and submit your homework. Items in **bold** require an answer. Make sure you change the author in the header to your own name.

1. Consider the code and output below:

```
t.test(x, y, paird = TRUE)
```

```
##
##  Welch Two Sample t-test
##
## data:  x and y
## t = -4.8099, df = 77.923, p-value = 7.231e-06
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -7.384073 -3.060789
## sample estimates:
## mean of x mean of y
##  5.569125 10.791556
```

a) **Has a paired or two-sample t-test been conducted?** A two-sample t-test has been conducted.

b) **What test do you think the user wanted, and can you see their mistake?** They wanted to conduct a paired t-test, however, they forgot the 'e' in "paired = True".

2. Consider the code and output below:

```
t.test(x, z)
```

```
##
##  Welch Two Sample t-test
##
## data:  x and z
## t = -1.8535, df = 79.267, p-value = 0.06753
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.9414860  0.1403064
## sample estimates:
## mean of x mean of y
##  5.569125  7.469715
```

Which of the following is the correct interpretation of the confidence interval?

- With 95% confidence, the population mean of `x` is between 0.14 and 3.94 units greater than the population mean of `z`.
- With 95% confidence, the population mean of `x` is between 3.94 and 0.14 units less than the population mean of `z`.
- With 95% confidence, the population mean of `x` is between 3.94 units less and 0.14 units greater than the population mean of `z`.
- With 95% confidence, the population mean of `x` is between 0.14 units less and 3.94 units greater than the population mean of `z`.

The correct interpretation of the confidence interval is "With 95% confidence, the population mean of `x` is between 3.94 units less and 0.14 units greater than the population mean of `z`."