



Bookmarks



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Readings

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Pre-Lab

Pre-Lab due May 03, 2016 at 17:00 UTC

Lab

Week 2: Hypothesis Testing (One Group Means) > Pre-Lab > Prepare for the Analysis

Reflect on the Question

Analyze the Data

Draw Conclusions

Primary Research Question

The average American adult man weighs 190 pounds. Do professional bull riders in the US weigh the same?

Breakdown Your Analysis

Let's break this analysis into its required steps:

1. Create a data frame for the US bull riders, and then calculate the sample mean and standard deviation for the weight of the bull-riders.
2. Create a histogram to visualize the distribution of bull-riders' weights.
3. Confirm the assumptions of a one-sample t-test
4. Run the t-test and interpret the results.

Here is the code you will use:

```
#Select bull riders from the US
```

```
USA <-bull[bull$Country=="USA",]
```

```
# Summarize the bull rider weights
```

```
mean(USA$Weight)
```

```
sd(USA$Weight)
```

```
# Visualize the weight distribution
```

```
hist(USA$Weight, main='Histogram of US Bull Rider Weights',xlab='Weight (lbs)')
```

```
# Run the single sample t-test
```

```
t.test(USA$Weight, mu=190)
```

Lab due May 03, 2016
at 17:00 UTC

Problem Set

Problem Set due May
03, 2016 at 17:00 UTC

(1/1 point)

1. What type of **graph** are we going to use to visualize the weights of the bull-riders?

☒ histogram ✓

☐ scatterplot

☐ boxplot

You have used 1 of 1 submissions

(1/1 point)

2. What portion of the code defines the **value** of the null hypothesis?

☒ mu=190 ✓

☐ mean(USA\$Weight)

☐ t.test

You have used 1 of 1 submissions

(1/1 point)

3. Which **assumption** can we confirm with the use of the following line of code:

```
hist(USA$Weight, main='Histogram of US Bull Rider  
Weights',xlab='Weight (lbs)')
```

☐ random sample

☒ Normality ✓

☐ linearity

☐ independent observations

[Click here for a video explanation of how to answer this question.](#)

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(1/1 point)

4. If you wanted to calculate the **standard error** for this sample of 37 riders, what additional line of code would you need to add?

☐ `mean(USA$Weight)/sqrt(37)`

☒ `sd(USA$Weight)/sqrt(37)` ✓

☐ `SE <- t.test(USA$Weight)`

[Click here for a video explanation of how to answer this question.](#)

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(1/1 point)

5. What is the cause of the error in the code below?

```
bull <- BullRiders
hist(bull$YearBorn, main = 'Histogram of Bull Rider
Weights, xlab= 'Weight (lbs)')
```

Error: unexpected symbol in "hist(bull\$YearBorn, main = 'Histogram of Bull Rider Weights, xlab= 'Weight'"

☐ The "YearBorn" variable is spelled differently in our dataset.

☐ We cannot have parentheses around lbs in the histogram statement.

☐ We forgot to create a label for the y-axis.

☒ We used too few quotation marks in the histogram statement.



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