Question 1

How much money do professional bull riders earn by participating in an event?

1. Create a new variable that equals the "average earnings per event" in the 2012 season for each bull rider in the dataset. Call this new variable "earnings_per"

2. Make a histogram of your "earnings per event" variable.

3. Use this data to answer the following questions.

*Use the "BullRiders.csv" dataset to answer the following questions. Instructions for installing "BullRiders.csv" can be found under the **Examine the Data** unit in this week's **Pre-Lab** section.*

(1/1 point)

1a. Have we met the assumptions for being able to calculate a **95% confidence interval** to estimate the true mean earnings-per-event for a professional bull rider (using t)? Use the histogram to help answer this question.

- ○ Yes, the distribution of "earnings_per" looks realively normal
- ◉ No, the distribution of "earnings_per" is positively skewed, with an outlier ✔
- ○ No, the distribution of "earnings_per" is negatively skewed, with an outlier
- ○ No, the distribution of "earnings_per" looks realively normal, but contains outliers

Lab due May 03, 2016 at 17:00 UTC

Problem Set
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You have used 1 of 1 submissions

When a variable is highly skewed, we can transform the data into a shape that allows us to conduct our analysis.

1. Create a new variable that is the log of your "earnings_per" variable.

2. Here is the code to make a log transformation of a variable:

   bull$newvariable <- log(bull$originalvariable)

3. Now use this new variable to answer the following questions.

(1/1 point)
1b. Make a **histogram** of this log-transformed variable. Notice how the distribution shape has changed. Can we reliably calculate a 95% confidence interval for the mean of this transformed variable?

- (•) Yes, the distributuon of the log-transformed variable looks relatively normal (some slight positive skew). ✔
- ( ) No, the distributuon of the log-transformed variable still shows severe positive skew.
- ( ) No, the distributuon of the log-transformed variable is negatively skewed.
- ( ) No, the distributuon of the log-transformed variable has many outliers.

You have used 1 of 1 submissions

(1/1 point)

1c. What is the **mean** of the log-transformed earnings-per-event variable? *(Round to 2 decimal places.)*

8.85 ✔

8.85

You have used 1 of 1 submissions

(1 point possible)

1d. What are the lower and upper-bounds for a **95% confidence interval** around this transformed mean? *(Round each to 2 decimal places.)*

Lower-bound

8.66 ✖ **Answer:** 8.57

8.66

You have used 1 of 1 submissions

(1/1 point)

Upper-bound *(Round to 2 decimal places.)*

9.12 ✔ **Answer:** 9.12

9.12

You have used 1 of 1 submissions

To best interpret the 95% confidence interval, we need to transform the lower and upper bound estimates back into dollars/events.

1. Here is the code you will use to take a log-transformed value back to the original units:

   exp(lowerboundvalue)

   exp(upperboundvalue)

2. Run this code on the **unrounded original values**. Then answer the questions that follow.

(1/1 point)

1e. What are the lower and upper-bounds for a **95% confidence interval** in dollars/event units. *(Round each to whole numbers with no decimal places.)*

Lower-bound

5283 ✔ **Answer:** 5283

5283

You have used 1 of 1 submissions

(1/1 point)

Upper-bound *(Round to whole number with no decimal places.)*

9142 ✔ **Answer:** 9142

9142

You have used 1 of 1 submissions