Lab 3: Professional Bull Riding

Over 1,200 bull riders from around the world are members of the Professional Bull Riders (PBR). They compete in more than 300 PBR-affiliated bull riding events per year. In the American tradition, the rider must stay atop the bucking bull for a full eight seconds. This data set includes information about the top-ranked bull riders for 2013. Rankings are based on a system which awards points for qualified rides at events throughout the season. More information is available at: http://www.pbr.com/en/bfts/standings/riders.aspx.

(2/2 points)

Review of Correlation

In this lab, you will use **correlation** to answer a question of interest. Let's start by remembering why we use correlation.

1a. A correlation can tell us:

- how much one variable causes another to vary.

Lab due Mar 15, 2016 at 18:00 UTC

Problem Set
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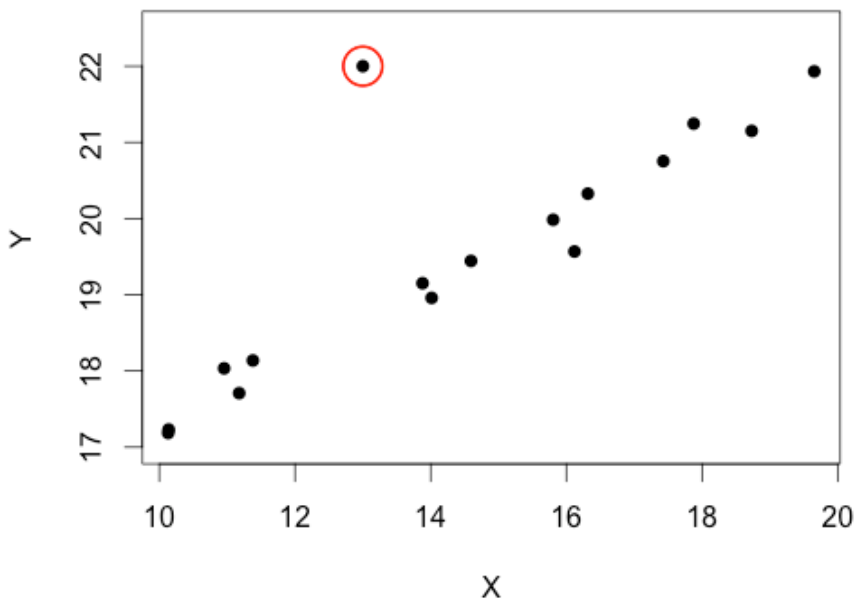
- Week 4: Bivariate Distributions (Categorical Data)
- Week 5: Linear Functions

- ◉ the direction and strength of a linear relationship between two quantitative variables. ✔
- ○ the frequency of scores for a quantitative variable.
- ○ the number of data points in a scatterplot that are outliers.

1b. Look at the scatterplot below. Select the answer that best describes what would happen to the value of the correlation coefficient r_{xy} if the circled point were removed from the analysis.

- ◉ The value of r_{xy} would increase. ✔
- ○ Removing the outlier would have no effect on the correlation coefficient.
- ○ The value of r_{xy} would decrease.
- ○ The circled point is not an outlier. It fits with the trend of the data.

You have used 1 of 2 submissions



(1/1 point)

Lab Preparation

In this lab you will be working with data from the Professional Bull Riders Association.

1. Open RStudio. Make sure you've installed the SDSFoundations package.
2. Type `library(SDSFoundations)` This will automatically load the data for the labs.
3.Type `bull <- BullRiders` This will assign the data to your Workspace.

Alternatively, you can use follow the steps in the "Importing a Data Frame" R tutorial video, and use the BullRiders.csv file. (Right-click and "Save As.") Make sure to **name** the dataframe "bull" when importing.

1. Open RStudio.
2. Click on "Import Dataset" button at the top of the workspace window. Choose *"from text file."*
3. Click on the location of the BullRiders.csv file you just downloaded.
4. Click on the BullRiders.csv file. Then, click Upload.
5. Look at the spreadsheet view of the data to answer the following questions.

2. One of the following questions will be answered in this lab using correlation. Select the question that can be answered with correlation.

- Is there a difference between the earnings of professional and non-professional bull riders?
- Is there a relationship between the name of the bull and the number of times he has bucked a rider?
- Which variable has the strongest linear relationship with earnings: successful ride percentage or Cup points? ✔
- On average, how much does a professional bull rider earn each year?

You have used 1 of 2 submissions