Question 1

During a professional bull-riding event, riders usually attempt to ride a bull three or more times. This means that they can record a "ride" (successfully staying on the bull) multiple times in the same event.

1. Subset the dataset for riders that had at least 1 ride in the 2014 season. Call this dataset new_bull.
2. Create a new variable or vector for the average number of rides per event for each bull rider in the new_bull dataset: **RidesPerEvent14 <- new_bull$Rides14/new_bull$Events14**
3. Make a histogram of your "rides per event" variable and find the five-number summary for your "rides per event" variable.

(5/5 points)

1a. What is the minimum value? (Round to 2 decimal places.)

0.20 ✔ **Answer:** .20

0.20

1b. What is the median?

1.00 ✔ **Answer:** 1

1.00

1c. What is the maximum value? *(Round to 2 decimal places.)*

2.00 ✔ **Answer:** 2.00

2.00

1d. Create a scatterplot of "rides per event" and yearly ranking (defined by the "Rank14" variable) and add a line of best fit. Which of the following best describes the relationship between these two variables?

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 two variables are related, but it's not linear.
- The two variables have no discernable linear relationship.
- The two variables have a positive linear relationship.
- (✔) The two variables have a negative linear relationship.

1e. What is the correlation coefficient for rides per event and yearly ranking? *(Report to 3 decimal places)*

-0.495 ✔ **Answer:** -.495

-0.495

You have used 1 of 1 submissions

(1/1 point)

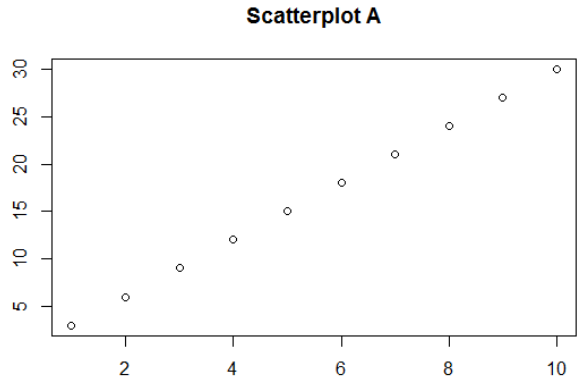
1f. Suppose that college GPA and graduate school GPA have a correlation coefficient of 0.75. Based on this, what proportion of variation in graduate school GPA is left unexplained after taking college GPA into account? *(Report to 4 decimal places)?*

0.4375 ✔ **Answer:** .4375

0.4375

You have used 1 of 1 submissions

Below are six scatterplots, each with a specific relationship. Use these scatterplots to answer each of the following questions.


Scatterplot A
5
10
15
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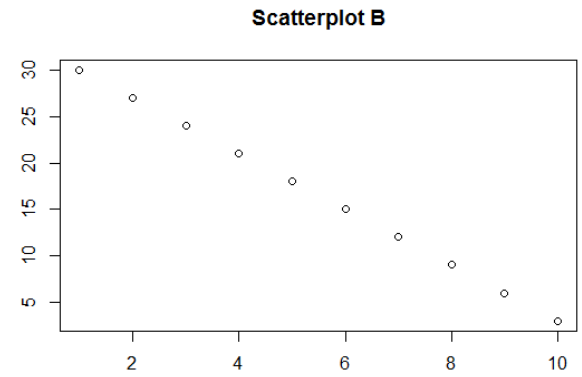
10


Scatterplot B
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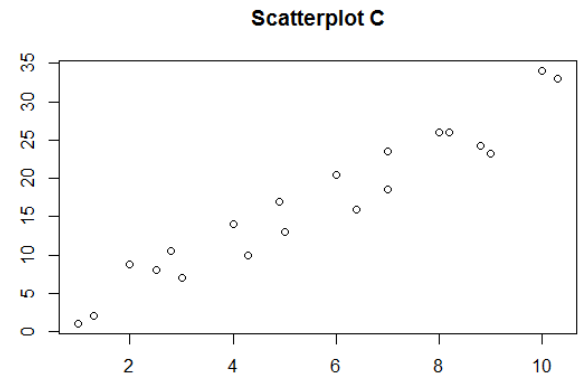
Scatterplot C
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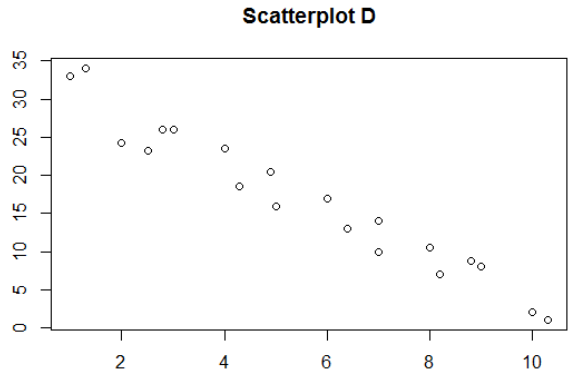

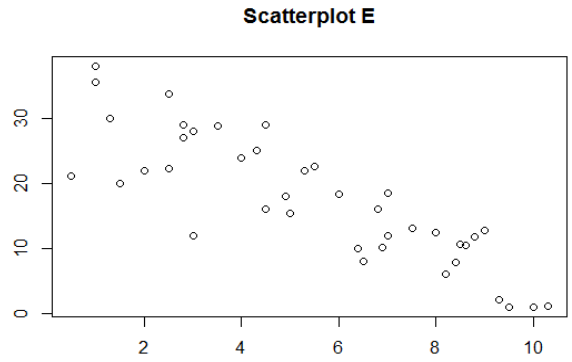

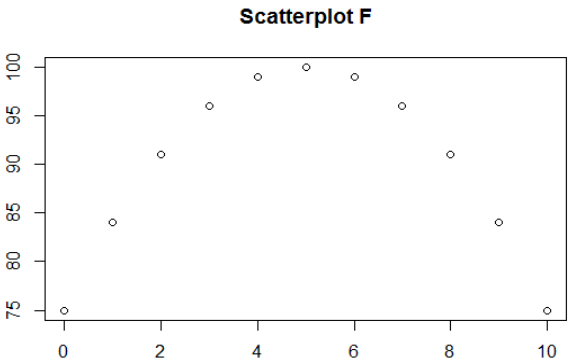

(5/6 points)

1g. Choose the correct scatterplot for each correlation coefficient.

r = 1.0000

Scatterplot A ▾ ✔ **Answer:** Scatterplot A

r = -0.790

Scatterplot D ▾ ✖ **Answer:** Scatterplot E

r = 0.000

Scatterplot F ▾ ✔ **Answer:** Scatterplot F

r = 0.950

Scatterplot C ✔ **Answer:** Scatterplot C

1h. Suppose you have been given a gift card worth $30. You wish to buy gloves that cost $3 per pair (including tax). Assuming that the price of gloves does not change, which scatterplot illustrates the relationship of the amount of money left on your gift card, given the number or pairs of gloves that you buy?

Scatterplot B ✔ **Answer:** Scatterplot B

1i. Suppose we are exploring the relationship between time spent walking and calories burned. We ask a group of people to begin walking. When each person stops, we record the number of calories burned, along with how many minutes he or she walked. Which scatterplot would best fit this relationship between calories burned and time spent walking?

Scatterplot C ✔ **Answer:** Scatterplot C

You have used 1 of 1 submissions