Correlation - Qualitative Assessment

Correlation - Qualitative Assessment

Question 22 (4 points)

Scatter plots are used to discover relationships between variables. Using the corresponding measurements of variable1 and variable2 in DATA, plot variable1 vs. variable2 and describe the correlation between variable1 and variable2.

- ◯ The strength of the relationship is strong, but it is not linear.
- ◯ The strength of the relationship is moderate, linear, and negative.
- ◯ There is no relationship, or the strength of the relationship is very weak
- ● The relationship is linear, positive, and strong.
- ◯ The relationship is linear, negative, and strong.
- ◯ The strength of the relationship is moderate, linear, and positive.
- ◯ None of the answers accurately characterize the data.

Correlation - Quantitative Evaluation

Correlation - Quantitative Evaluation

Question 23 (4 points)

Correlation is used to discover relationships between variables. Evaluate the correlation between the variables in DATA. What is the correlation?

r = 0.310

- ● 0.310
- ◯ 0.984
- ◯ -0.991
- ◯ None of the answers are correct.
- ◯ -0.008

more

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Question 24 (4 points)

The equation of the regression line is Y = a + bX. Match the following symbols to the description to the right.

6 a

4 R^2

3 b

5 R

1 X

2 Y

1. Denotes the variable plotted on the horizontal axis and called the explanatory or independent variable.
2. Denotes the variable plotted on the vertical axis and is called the response or dependent variable.
3. The regression result = the change in Y for a change in X of +1, and called the slope.
4. The proportion of the variability of Y that is explained by or accountable to X.
5. The strength and direction of the linear relationship between X and Y.
6. The regression result = elevation of the line at X=0, and called the intercept.

Regression - Assumption

Regression - Assumptions

Question 25 (4 points)

You are required to setup a predictive equation involving variable 1 and variable 2. First, you plot the DATA to determine if linear regression applies. You decide

- (●) The linear regression equation will be very useful because the points have a strong linear pattern.
- ( ) Linear regression is not applicable because the point pattern is curvilinear (has a curve).
- ( ) You need more information before deciding to use linear regression.
- ( ) Linear regression is not useful because the points have no discernible pattern.
- ( ) Linear regression is not applicable because it appears that there are two linear patterns indicating that the data come from two populations.

Regression - Interpret slope

Regression - Interpretation

Question 26 (4 points)

An important application of regression in manufacturing is the estimation of cost of production. Based on DATA from Ajax Widgets relating cost (Y) to volume (X), what is the cost per widget?

- ◯ 7.54
- ◯ None of the answers are correct
- ◉ 7.38 = b
- ◯ 8.21
- ◯ 8.75

Question 27 (4 points) ✓ *Saved*

An important application of regression in manufacturing is the estimation of cost of production. Based on DATA from Ajax Widgets relating cost (Y) to volume (X), what is the cost of producing 600 widgets?

- ◯ 6312
- ◯ None of the answers are correct.
- ◉ 6954
- ◯ 5206
- ◯ 5826