

Skill test Questions and Answers

1) Linear Regression is a supervised machine learning algorithm.

A) TRUE

B) FALSE

2) Linear Regression is mainly used for Regression.

A) TRUE

B) FALSE

3) Elastic net is a regularized regression method that linearly combines the L1 and L2 penalties of the Lasso and Ridge methods.

A) TRUE

B) FALSE

4) Which of the following methods do we use to find the best fit line for data in Linear Regression?

A) Least Square Error

B) Maximum Likelihood

C) Logarithmic Loss

D) Both A and B

5) Which of the following evaluation metrics can be used to evaluate a model while modeling a continuous output variable?

A) AUC-ROC

B) Accuracy

C) Logloss

D) Root-Mean-Squared-Error

6) Lasso Regularization can be used for variable selection in Linear Regression.

A) TRUE

B) FALSE

7) Which of the following is true about Residuals ?

A) Higher is better

B) Lower is better

C) A or B depend on the situation

D) None of these

8) Suppose that we have N independent variables (X_1, X_2, \dots, X_n) and dependent variable is Y . Now Imagine that you are applying linear regression by fitting the best fit line using least square error on this data.

You found that correlation coefficient for one of it's variable(Say X_1) with Y is -0.95 .

Which of the following is true for X_1 ?

A) Relation between the X_1 and Y is weak

B) Relation between the X_1 and Y is strong

C) Relation between the X_1 and Y is neutral

D) Correlation can't judge the relationship

9) Looking at above two characteristics, which of the following option is the correct for Pearson correlation between V_1 and V_2 ?

If you are given the two variables V_1 and V_2 and they are following below two characteristics.

1. If V_1 increases then V_2 also increases

2. If V1 decreases then V2 behavior is unknown

A) Pearson correlation will be close to 1

B) Pearson correlation will be close to -1

C) Pearson correlation will be close to 0

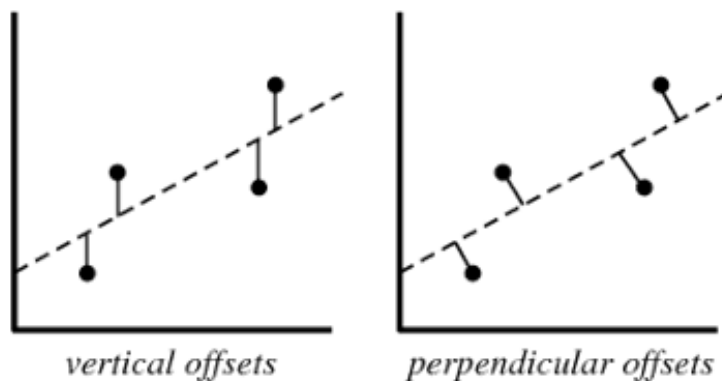
D) None of these

10) Suppose Pearson correlation between V1 and V2 is zero. In such case, is it right to conclude that V1 and V2 do not have any relation between them?

A) TRUE

B) FALSE

11) Which of the following offsets, do we use in linear regression's least square line fit? Suppose horizontal axis is independent variable and vertical axis is dependent variable.



A) Vertical offset

B) Perpendicular offset

C) Both, depending on the situation

D) None of above

12) Overfitting is more likely when you have huge amount of data to train?

A) TRUE

B) FALSE

13) We can also compute the coefficient of linear regression with the help of an analytical method called “Normal Equation”. Which of the following is/are true about Normal Equation?

1. We don't have to choose the learning rate
2. It becomes slow when number of features is very large
3. There is no need to iterate

A) 1 and 2

B) 1 and 3

C) 2 and 3

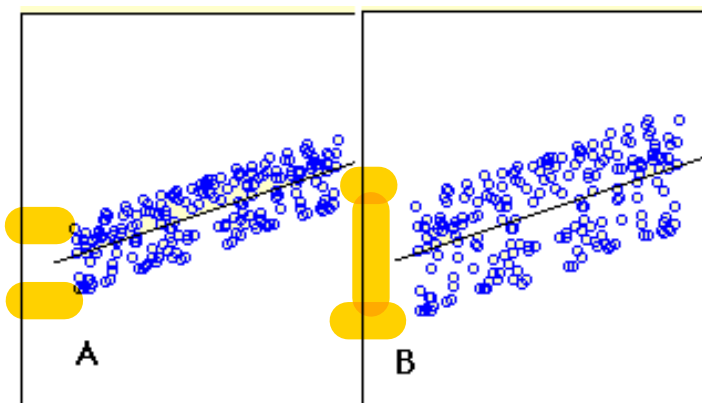
D) 1,2 and 3

14) Which of the following statement is true about sum of residuals of A and B?

Below graphs show two fitted regression lines (A & B) on randomly generated data. Now, I want to find the sum of residuals in both cases A and B.

Note:

1. Scale is same in both graphs for both axis.
2. X axis is independent variable and Y-axis is dependent variable.



A) A has higher sum of residuals than B

B) A has lower sum of residual than B

C) Both have same sum of residuals

D) None of these

Question Context 15-17:

Suppose you have fitted a complex regression model on a dataset. Now, you are using Ridge regression with penalty λ .

15) Choose the option which describes bias in best manner.

A) In case of very large λ ; bias is low

B) In case of very large λ ; bias is high

C) We can't say about bias

D) None of these

16) What will happen when you apply very large penalty?

A) Some of the coefficient will become absolute zero

B) Some of the coefficient will approach zero but not absolute zero

C) Both A and B depending on the situation

D) None of these

17) What will happen when you apply very large penalty in case of Lasso?

A) Some of the coefficient will become zero

B) Some of the coefficient will be approaching to zero but not absolute zero

C) Both A and B depending on the situation

D) None of these

18) Which of the following statement is true about outliers in Linear regression?

A) Linear regression is sensitive to outliers

B) Linear regression is not sensitive to outliers

C) Can't say

D) None of these

19) Suppose you plotted a scatter plot between the residuals and predicted values in linear regression and you found that there is a pattern between them. Which of the following conclusion do you make about this situation?

A) Since there is a pattern means our model is not good

B) Since there is a pattern means our model is good

C) Can't say

D) None of these