Regression quiz

8 out of 8 correct

1. Which of the following techniques is used to minimize the cost function in linear regression?

- [x] Gradient Descent
- [ ] Multiple Linear Regression
- [ ] Polynomial Regression
- [ ] None of the above

Explanation: Gradient Descent is an optimization algorithm used to minimize the cost function in linear regression.

2. Which of the following regression techniques can be used to model nonlinear relationships between the independent and dependent variables?

- [ ] Linear Regression
- [ ] Multiple Linear Regression
- [x] Polynomial Regression
- [ ] None of the above

Explanation: Polynomial Regression can be used to model nonlinear relationships between the independent and dependent variables by adding polynomial terms to the regression equation.

3. In which type of regression is the dependent variable continuous and the independent variable categorical?

- [ ] Linear Regression

- ◯ Multiple Linear Regression
- ◉ Logistic Regression
- ◯ Polynomial Regression

Explanation: Logistic Regression is used when the dependent variable is categorical and the independent variable(s) are continuous or categorical.

4. What is the primary objective of Multiple Linear Regression?

- ◉ To predict a continuous dependent variable using multiple independent variables
- ◯ To model the relationship between two continuous variables
- ◯ To model the relationship between a continuous dependent variable and a categorical independent variable
- ◯ None of the above

Explanation: The primary objective of Multiple Linear Regression is to predict a continuous dependent variable using multiple independent variables.

5. Which of the following is a limitation of Linear Regression?

- ◯ It can only model linear relationships between the independent and dependent variables
- ◯ It can be easily overfit to the training data
- ◯ It is sensitive to outliers in the data
- ◉ All of the above

Explanation: Linear Regression can only model linear relationships between the independent and dependent variables, it can be easily overfit to the training data, and it is sensitive to outliers in the data.

6. Which of the following is a disadvantage of using Gradient Descent to minimize the cost function?

- ◉ It can be computationally expensive for large datasets

- ◯ It is less accurate than other optimization algorithms
- ◯ It can only be used for linear regression
- ◯ None of the above

Explanation: Gradient Descent can be computationally expensive for large datasets, as it requires multiple iterations to converge to the minimum of the cost function.

7. Which of the following is a method for selecting the best subset of independent variables in Multiple Linear Regression?

- ◯ Forward selection
- ◯ Backward elimination
- ◯ Stepwise regression
- ◉ All of the above

Explanation: Forward selection, backward elimination, and stepwise regression are all methods for selecting the best subset of independent variables in Multiple Linear Regression.

8. Which of the following is a technique used to address the problem of multicollinearity in Multiple Linear Regression?

- ◯ Ridge Regression
- ◯ Lasso Regression
- ◯ Elastic Net Regression
- ◉ All of the above

Explanation: Ridge Regression, Lasso Regression, and Elastic Net Regression are all techniques used to address the problem of multicollinearity in Multiple Linear Regression.

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