1. What is Linear Regression?
   b. A supervised learning algorithm used for regression problems.

2. Which of the following is NOT an assumption of Linear Regression?

   c. Multicollinearity

3. What is Multiple Regression?

   b. A supervised learning algorithm used for regression problems involving multiple independent variables.

4. Which of the following is an advantage of Multiple Regression over Simple Linear Regression?

   a. More accurate predictions

5. What is Polynomial Regression?

   b. A supervised learning algorithm used for regression problems that model the relationship between the response variable and the independent variable as an nth degree polynomial.

6. Which of the following is NOT an assumption of Polynomial Regression?

   a. Linearity

7. What is the coefficient of determination (R-squared) used for in Linear Regression?

   d. To measure the goodness of fit of the model.

8. Which of the following statements is true about Multicollinearity in Multiple Regression?

   a. It is desirable to have high levels of multicollinearity between the independent variables.

9. Which of the following statements is true about Overfitting in Polynomial Regression?

   b. It occurs when the model is too complex and fits the noise in the data.

10. Which of the following statements is true about Regularization in Linear Regression?

   b. It is used to reduce the variance of the model.

11. Which of the following is an example of Linear Regression?

   c. Predicting the price of a house based on its size and location.

1. A car rental company wants to predict the rental price of its cars based on the age of the car and the number of miles driven. Which type of regression would be most appropriate for this problem?
   b. Multiple Regression

2. A clothing retailer wants to predict the sales of its products based on the price of the product and the marketing spend on the product. However, the retailer suspects that there might be a non-linear relationship between the price and the sales. Which type of regression would be most appropriate for this problem?

   c. Polynomial Regression

3. A healthcare provider wants to predict the length of hospital stay for patients based on their age, gender, medical history, and the severity of their illness. However, the provider suspects that there might be a strong correlation between some of the independent variables. Which technique can be used to address this issue?

   a. Multicollinearity b. Regularization

4. A real estate agent wants to predict the selling price of a house based on its location, size, number of bedrooms, and age. However, the agent suspects that the relationship between the independent variables and the dependent variable might not be linear. Which type of regression would be most appropriate for this problem?

   c. Polynomial Regression

5. A marketing agency wants to predict the conversion rate of a digital advertising campaign based on the target audience, the ad creative, and the ad spend. However, the agency suspects that there might be interactions between the independent variables. Which technique can be used to address this issue?

   a. Multicollinearity