WAYGROUND formerly Quizizz Worksheets

Name

2. Logistic Regression

Total questions: 10

Worksheet time: 11mins

Instructor name: Puneet Kansal

Class

Date

1. Logistic regression is used for ___?

a) clustering

b) All of these

c) regression

d) classification

2. Logistic Regression is a Machine Learning algorithm that is used to predict the probability of a ___?

a) categorical independent variable

b) numerical dependent variable.

c) numerical independent variable.

d) categorical dependent variable.

3. You are predicting whether an email is spam or not. Based on the features, you obtained an estimated probability to be 0.75. What's the meaning of this estimated probability?

a) there is a 25% chance that the email will not be spam

b) there is a 25% chance that the email will be spam

c) there is a 75% chance that the email will be spam

d) there is a 75% chance that the email will not be spam

4. In a logistic regression model, the decision boundary can be ___.

a) linear

b) none of these

c) both (A) and (B)

d) non-linear

5. What's the cost function of the logistic regression?

a) Logistic Function

b) Log-Loss

c) Mean Squared Error

d) Sigmoid function

6. Why cost function which has been used for linear regression can't be used for logistic regression?

   a) Linear regression uses mean squared error as its cost function. If this is used for logistic regression, then it will be a convex function of its parameters. Gradient descent will converge into the global maximum only if the function is convex.

   b) Linear regression uses mean squared error as its cost function. If this is used for logistic regression, then it will be a non-convex function of its parameters. Gradient descent will converge into the global minimum only if the function is convex.

   c) Linear regression uses mean squared error as its cost function. If this is used for logistic regression, then it will be a convex function of its parameters. Gradient descent will converge into the global maximum only if the function is non-convex.

   d)) Linear regression uses mean squared error as its cost function. If this is used for logistic regression, then it will be a non-convex function of its parameters. Gradient descent will converge into the global minimum only if the function is non-convex.

7. You are predicting whether an email is spam or not. Based on the features, you obtained an estimated probability to be 0.75. What's the meaning of this estimated probability? The threshold to differ the classes is 0.5.

   a) both (A) and (B)

   b) The email is spam

   c) The email is not spam

   d) Can't determine

8. What's the hypothesis of logistic regression?

   a) to limit the cost function between -1 and 1

   b) to limit the cost function between 0 and 1

   c) to limit the cost function between -infinity and +infinity

   d) to limit the cost function between 0 and +infinity

9. Which one is not true?

a) Logistic Regression is a generalized Linear Regression in the sense that we don't output the weighted sum of inputs directly, but we pass it through a function that can map any real value between 0 and 1.

b) Logistic Regression is used to determine the value of a continuous dependent variable

c) The value of the sigmoid function always lies between 0 and 1

d) If we take the weighted sum of inputs as the output as we do in Linear Regression, the value can be more than 1 but we want a value between 0 and 1. That's why Linear Regression can't be used for classification tasks.

10. In a logistic regression, if the predicted logit is 0, what's the transformed probability?

a) 1

b) 0

c) 0.5

d) 0.05

Answer Keys

1. d) classification
2. d) categorical dependent variable.
3. c) there is a 75% chance that the email will be spam , a) there is a 25% chance that the email will not be spam
4. c) both (A) and (B)
5. b) Log-Loss
6. b) Linear regression uses mean squared error as its cost function. If this is used for logistic regression, then it will be a non-convex function of its parameters. Gradient descent will converge into the global minimum only if the function is convex.
7. b) The email is spam
8. b) to limit the cost function between 0 and 1
9. b) Logistic Regression is used to determine the value of a continuous dependent variable
10. c) 0.5