Module 1 Quiz

Started: Sep 7 at 9:25pm

Quiz Instructions

This is a 60-minute timed quiz on the resources for this module. Click **Take the Quiz** below to start the exam.

Question 1 2 pts

Which of the following is true?

- Logistic regression error values have to be normally distributed, but with linear regression this is not the case.
- Linear regression error values have to be normally distributed, but with logistic regression this is not the case.
- Both linear regression and logistic regression error values have to be normally distributed.
- Both linear regression and logistic regression error values do not have to be normally distributed.

Question 2 2 pts

One method of measuring the performance of a logistic regression model is AIC, which is similar to R-Squared for linear regression. Which statement below is true about AIC?

- We prefer a model with maximum AIC value.
- We prefer a model with minimum AIC value.
- Both, but depends on the situation.

○
None of the above.

Question 3 2 pts

Which of the following statements is true for *k*-NN classifiers?

○
The decision boundary is smoother with smaller values of *k*.

○
The decision boundary is linear.

○
The classification accuracy is better with larger values of *k*.

○
k-NN does not require an explicit training step.

Question 4 2 pts

Compute the following from the confusion matrix: **Precision**

n = 165	Predicted: No	Predicted: Yes	
Actual: No	Tn =50	FP=10	60
Actual: Yes	Fn=5	Tp=100	105
	55	110	

○
91.86

○
91.87

○
90.90

○
93.42

Question 5 2 pts

Compute the following from the confusion matrix: **Sensitivity**

n = 165	Predicted: No	Predicted: Yes	
Actual: No	Tn =50	FP=10	60
Actual: Yes	Fn=5	Tp=100	105
	55	110	

○
85.91

○
95.23

○
91.78

○
85.79

Question 6 2 pts

What are the difficulties with the practical exploitation of the power of the *k*-NN approach? Select all that apply.

- [ ] Although no time is required to estimate parameters from the training data (as would be the case for parametric models such as regression), the time to find the nearest neighbors in a large training set can be prohibitive.
- [ ] The number of records required in the training set to qualify as large increases exponentially with the number of predictors p.
- [ ] *K*-NN is a “lazy learner”: the time-consuming computation is deferred to the time of prediction.

Question 7 2 pts

True or False: Generally speaking, for *k*-NN classifiers, if *k* is too high, we will miss out on the method’s ability to capture the local structure in the data, one of its main advantages.

- ○ True
- ○ False

Question 8 2 pts

True or False: Generally speaking, for *k*-NN classifiers, if *k* is too low, we may be fitting to the noise in the data.

- ○ True
- ○ False

Question 9 2 pts

Which statements are true about the logit function? Select all that apply.

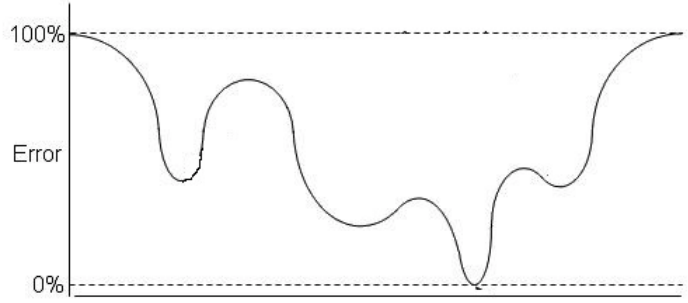
- [ ] Instead of Y as an outcome variable (like in linear regression), we use the function Y called the logit.
- [ ] Logit can be modeled as a linear function of the predictors.

☐ The logit can be mapped back to a probability, which, in turn, can be mapped to a class.

☐ The logit function is commonly used in linear probability models.

Question 10 2 pts

Suppose the following graph is a cost function for logistic regression:



How many local minimas are present in the graph?

○ 1

○ 2

○ 3

○ 4

Quiz saved at 9:26pm Submit Quiz