Source:

Part B

Please answer the following questions and briefly explain your answer:

- Thinking about the R^2 metric used for evaluating regression, answer the following questions:
  - What is the best highest possible score you could get?
    - The highest possible score is 1, representing a perfect fit. In order to achieve an R^2 of 1, the error must be 0.
  - If your model simply predicted the average value of the training set no matter what the input was, what score would you get on a test set whose average matched that of the training set?
    - The score would be 0, as the denominator and numerator would be equal. This would result in the equation 1-1, which equals 0. What is the lowest score that you can get? When using accuracy to measure your model's performance on a classification problem: What is the best possible score you could get? If your model always predicted the same class no matter what the input, what score would you get on a test set where 85% of the items were in that class? What is the worst possible score you can get on a dataset that only has two classes? A model gets a recall score of 0 for class A on a test set with classes A, B, and C. If you take one of the test items that is in class A and have this model predict what class it is, what will it predict? A model gets a precision score of 1 for class A on a test set with classes A, B, and C. If you take one of the test items that is in class A and have your model predict what class it is, what will it predict? If a model with classes A and B has an AUC score of 1 and you give it an item from the test set that is in class A, what class will it predict and what probability will it give for that class? If a model with classes A and B has an AUC score of 0 and you give it an item from the test set that is in class A, what class will it predict and what probability will it give for that class?