

Statistics 503 Exam 1

Friday, March 11 2005 Open notes

1. The following table has numerous problems.
Give three ways to improve the table.

I

II

III

2. Which of the following two sets of variance-covariance matrices would be considered to have heterogeneous variance-covariance?
3. The following regression model was fit to the movies data, and this conclusion was proffered:
Do you believe it? Explain your answer.
4. These are results from building a tree for data on Draw the boundary between the two groups.
5. Three trees are built from bootstrap samples of the northern olive oils data (predictors are palmitic, palmitoleic, stearic, oleic, linoleic, linolenic, arachidic, eicosenoic, and there are three areas, 7, 8, 9). Predict the class for this case for both trees. If the voting scheme used to combine the predictions is majority rule, which class would it be predicted to be? (Recall that if the split statement is true go to the left node.)
6. Write down the classification rule for the following output from R.
7. Read this data description.
Which of the following would you consider to be the major questions to answer using this data? Group the questions into three categories: important (I), less important (L), cannot be answered by this data (N).
8. The following plot shows a data set where there are ... predictors and ... classes. We use a simple regression model to predict the class. What problem will be observed with the result? How does this relate to a feedforward neural network classifier?