**ISLR 4.7 Prob#5**

Graphical user interface, text, Word

Description automatically generated with medium confidence

* QDA will perform better in training set because of its better flexibility and it will fit the training dataset with better accuracy compare to LDA.

On the test set, LDA should perform better than QDA because QDA will overfit the test set.

A screenshot of a computer

Description automatically generated with low confidence

* For the case of non-linear decision boundary, QDA will perform better than LDA in training and test set because of greater flexibility of QDA.

Text

Description automatically generated

* With the increment of n, a more flexible method will yield a better fit. As a result, I expect that test prediction accuracy of QDA relative to LDA will improve.

Text

Description automatically generated

* False
* With fewer sample point, QDA as a flexible model will yield to overfit the test set and performance will be worser than LDA.