ProblemSet 8

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Question 5: The dimension is 450.

Question 6: (LASSO) The optimal value of lamda is 0.0257. The in-sample RMSE is 0.1825678. The out-of-sample RMSE is 0.109765.

Question 7: (Ridge) The optimal value of lamda is 0.604. The in-sample RMSE is 0.1641134. The out-of-sample RMSE is 0.113765.

Question 8: (Elastic) The optimal value of lamda is 0.0533. The optimal value of alpha is 0.00609. The in-sample RMSE is 0.1630618. The out-of-sample RMSE is 0.1056152. Due to the alpha value is close to 0, I believe that we should use LASSO model.

Question 9: Because of there is more variables than observations in the housing.train data, if we use linear regression model to estimate data, the model will be over fitting.