

# PROBLEM SET № 9

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03/31/2020

## Question 5

House.training consists of 404 observations of 450 variables.

## Question 6

in sample rmse: 0.1663065

out of sample rmse: 0.2132119

lambda = 0.015

## Question 7

in sample rmse: 0.1905476

out of sample rmse: 0.2369704

lambda = 0.0493

## Question 8

lambda = 0.0639

alpha = 0.194

in sample rmse: 0.1579661

out of sample rmse: 0.2097217

Ridge regression should be used based on the value of alpha obtained from elastic net. The value of alpha found in question 8 is much closer to zero than one.

## Question 9

OLS will not work because of the polynomial variables in housing.training data. The ridge regression model has a higher RMSE, so this model does worse at predicting out-of-sample data.