Homework 2

Evan Stansell

(a) Null Model

Average train MSE = 10.371

Average test MSE = 10.592

(b) OLS Regression

Average train MSE = 5.047

Average test MSE = 5.163

MSE train standard deviation = 0.06

MSE test standard deviation = 0.657

Average train R^2 = 0.513

Average test R^2 = 0.512

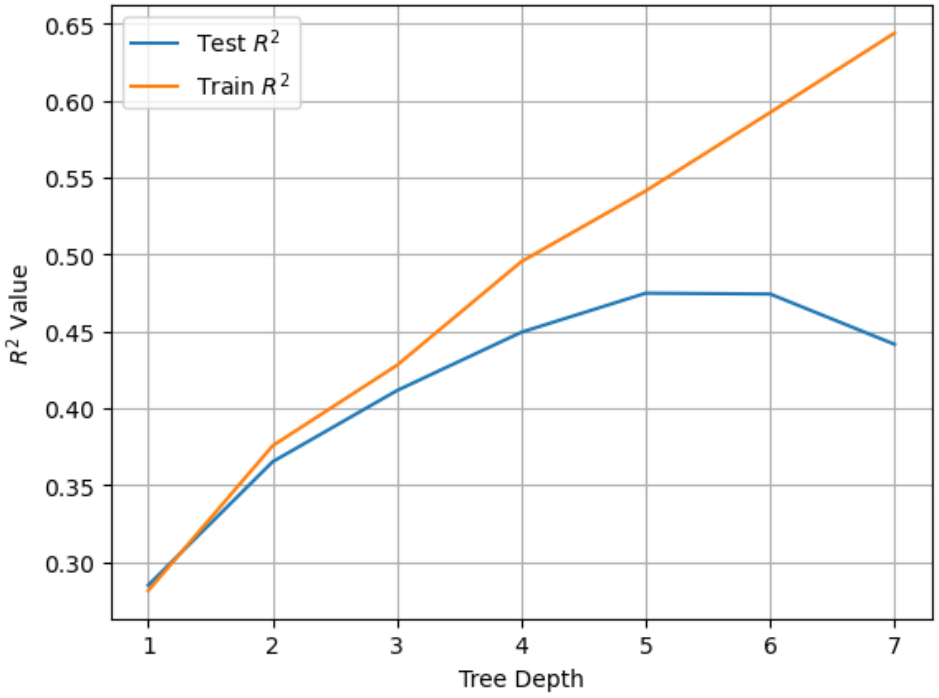
R^2 train standard deviation = 0.01

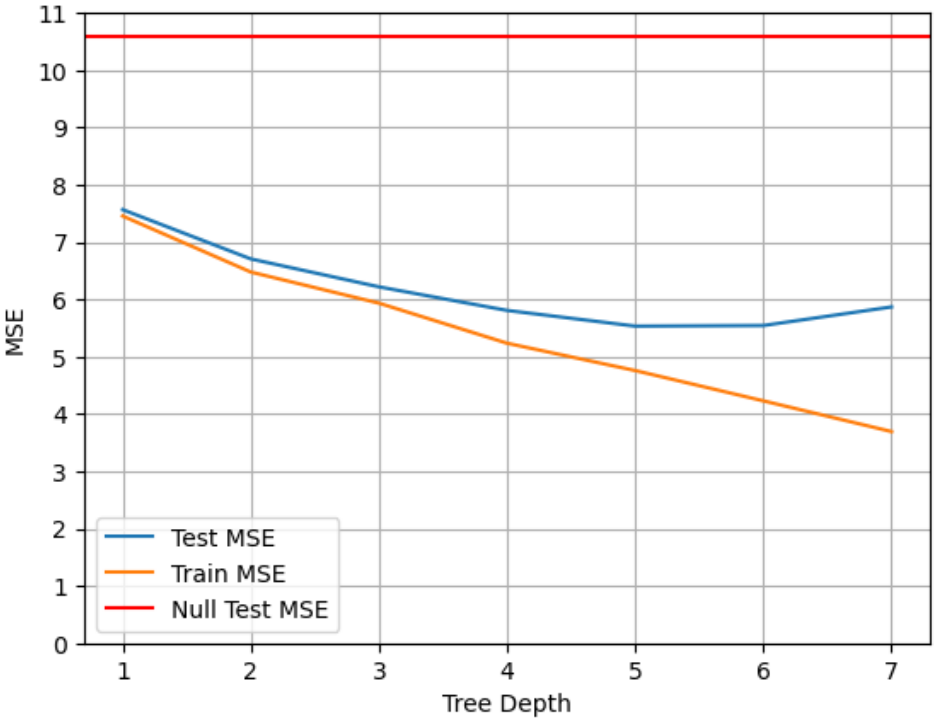
R^2 test standard deviation = 0.05

Average value of log of determinant = 18.255

Standard deviation of log of determinant = 0.178

(c) Decision Tree Regression





(d) Random Forest Regression

Number of Trees	**10**	**30**	**100**	**300**
Avg Train MSE	0.899	0.736	0.669	0.652
Avg Test MSE	5.200	4.916	4.803	4.765
Train MSE SD	0.039	0.016	0.011	0.008
Test MSE SD	0.386	0.365	0.395	0.394
Avg Train R^2	0.913	0.929	0.936	0.937
Avg Test R^2	0.506	0.533	0.544	0.548
Train R^2 SD	0.004	0.002	0.001	0.001
Test R^2 SD	0.043	0.039	0.038	0.037