

c.)

	Decision or Regression Tree	Linear Regression (Normal Equations)	Linear Ridge Regression (Normal Equations)	Linear Regression (Gradient Descent)	Logistic Regression (Gradient Descent)
Spambase (Acc)	Training: 0.92 Test: 0.89	Training: 0.89 Test: 0.89	Training: 0.90 Test: 0.90	Training: 0.91 Test: 0.90	Training: 0.92 Test: 0.92
Housing (MSE)	Training: 12.1 Test: 39.4	Training: 24.5 Test: 24.3	Training: 24.7 Test: 29.7	Training: 24.4 Test: 23.9	Description Below

Logistic regression does not make sense to use for housing, because you are trying to predict a continuous value rather than a binary classification. Logistic regression utilizes a sigmoid function wrapped around the prediction, which is used to bound the final prediction between 0 and 1. This generates a probability, which you can ultimately use to predict which of the two classes the instance should be labeled with. This just doesn't make sense when trying to predict a continuous value.

d.)

Decision Tree

	Predicted: Positive	Predicted: Negative
Actual: Positive	481	128
Actual: Negative	37	887

Linear Regression

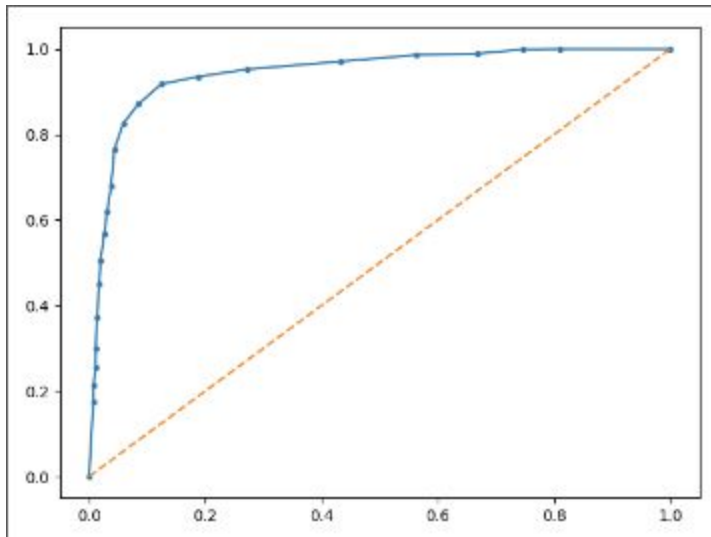
	Predicted: Positive	Predicted: Negative
Actual: Positive	705	205
Actual: Negative	73	1317

Logistic Regression

	Predicted: Positive	Predicted: Negative
Actual: Positive	808	107
Actual: Negative	65	1320

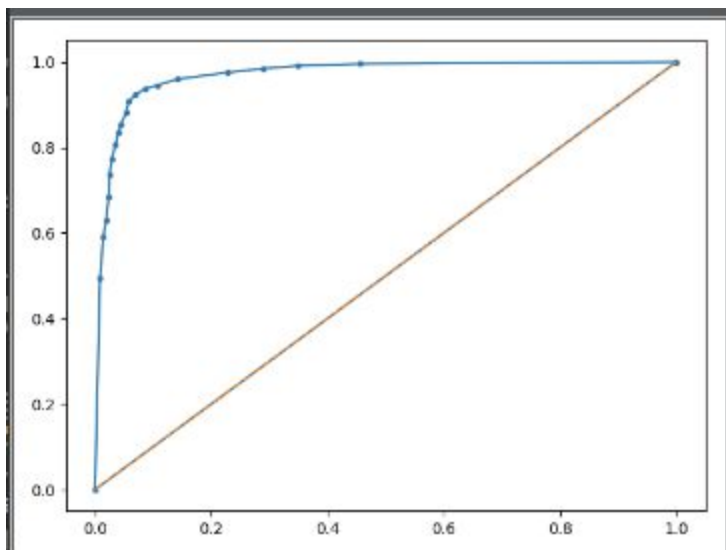
e.)

Linear Regression ROC



AUC = 0.9501

Logistic Regression ROC



AUC = 0.9699