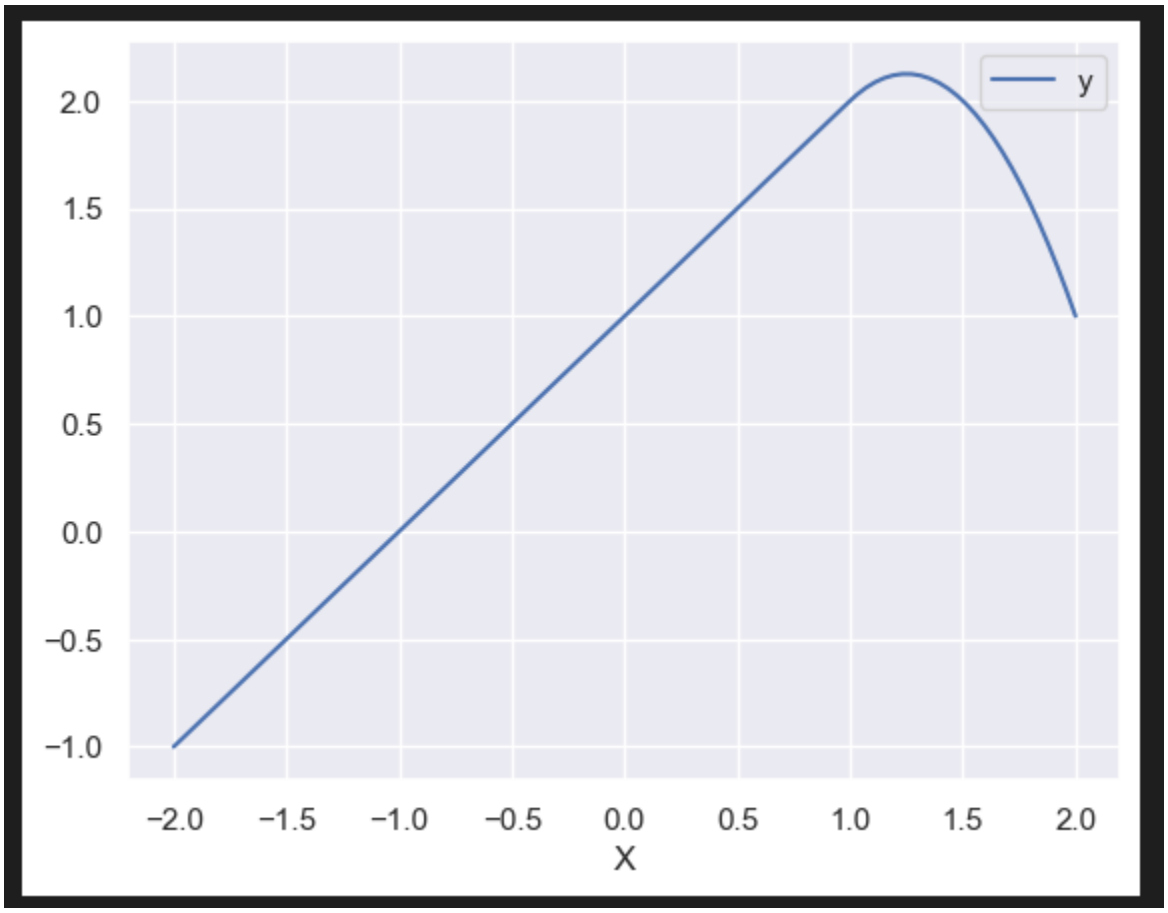
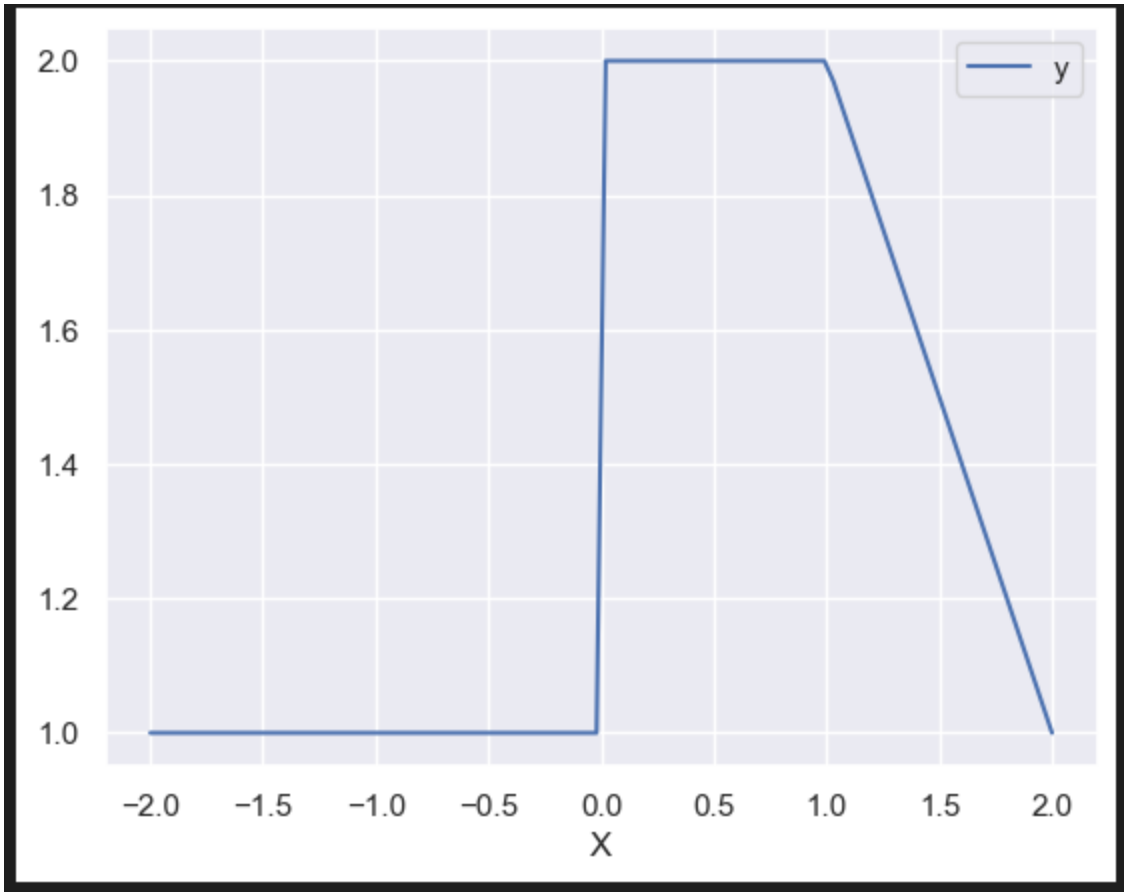
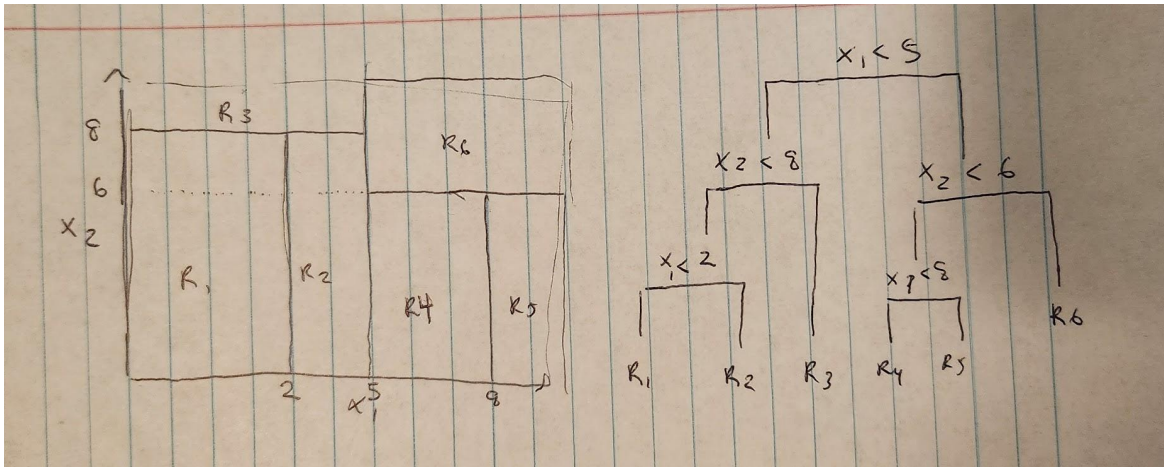
Bernhard Nordemann
CS4342
Worked with Brandon Vuong for Applied questions.

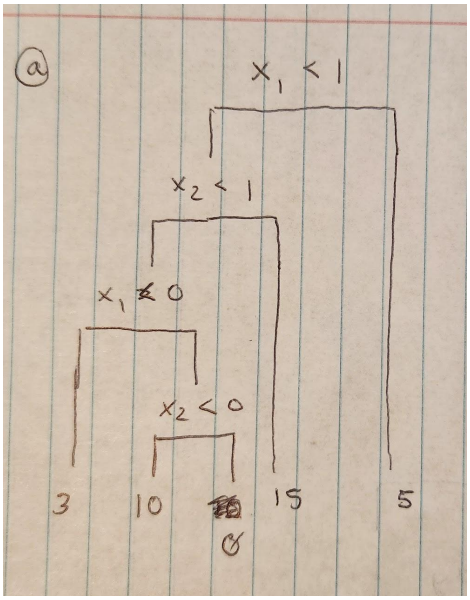
1. 

2. 

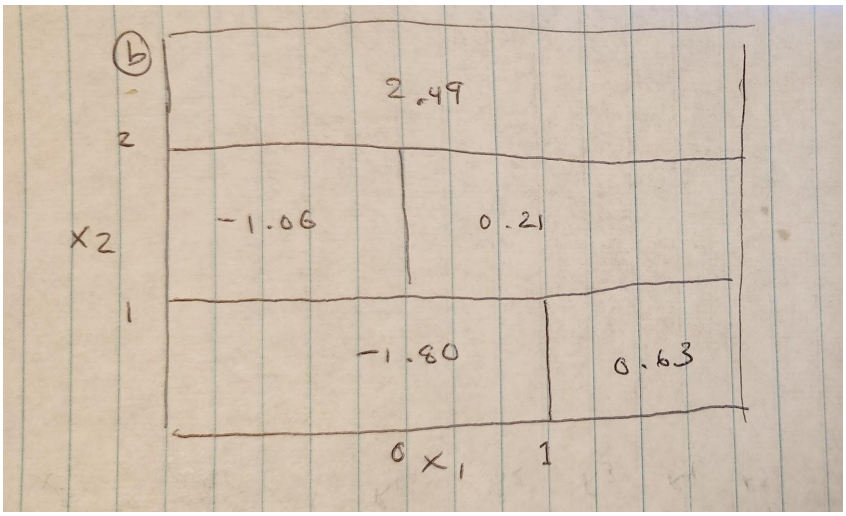
3. 

4. Creating an additive model using depth-one trees, or stumps, leads to a model that is of the form given because each tree is generated by splitting the data on one predictor, and the final model is formed by adding the shrunken version of these trees repeatedly. Therefore, each additive term will depend on only one predictor, leading to an additive model.
5. .

a.



b.



6. The first approach is the majority vote approach. In this case, 6/10 trees predict that the class is Red, so the final classification using the majority approach is Red.
   The second approach, the probability approach predicts based on the average probability of all of the bootstrapped samples. The average in this case is 0.47, which is less than 0.5, so our final classifier using the average probability approach is Green.