

3.

- a) KNN would predict $y_3=2$ because the model is only finding the average of one nearest neighbor. Since x_2, y_2 is x_3 nearest neighbor y_3 would be predicted to be 2.
- b) The linear regression model would predict y_3 to be 100 because linear regression fits a line to the dataset. Since there are only 2 points that are show $y=x$, $y_3=100$.
- c) The inductive bias of the KNN would be that it assumes that categories near each other should be grouped together, but if there is not enough information it groups anything over/under the maximum and minimum extremities to the maximum or minimum extremity value. For linear regression, it assumes that everything fits linearly when it might not and lead to an underfitted graph.