

Answer the questions in the spaces provided. If you run out of room for an answer, continue on the back of the page.

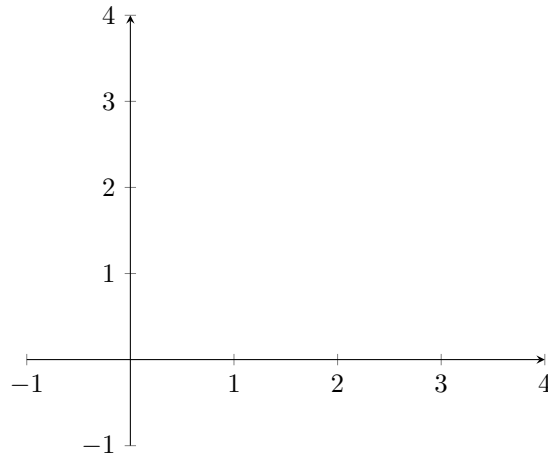
Name and Grade: _____

Today's Date: _____

1. (2 points) Given the following data:

x1	x2	y
1	0	0
1	1	0
1	2	1
2	2	1
3	3	0
3	1	1
3	2	1

Graph the data and draw the line that corresponds to the decision that maximizes information gain. Shade in points that correspond to $y = 0$ and leave hollow the ones that correspond to $y = 1$.



2. (4 points) Calculate the information gain for the above decision using the Gini Impurity measure.

3. (2 points) Draw the decision tree corresponding to the decision in Question 1.

4. (2 points) What is the maximum possible information gain of a decision? What is the minimum?