Evaluating Model Performance

School Connect: Intro to DS & AI

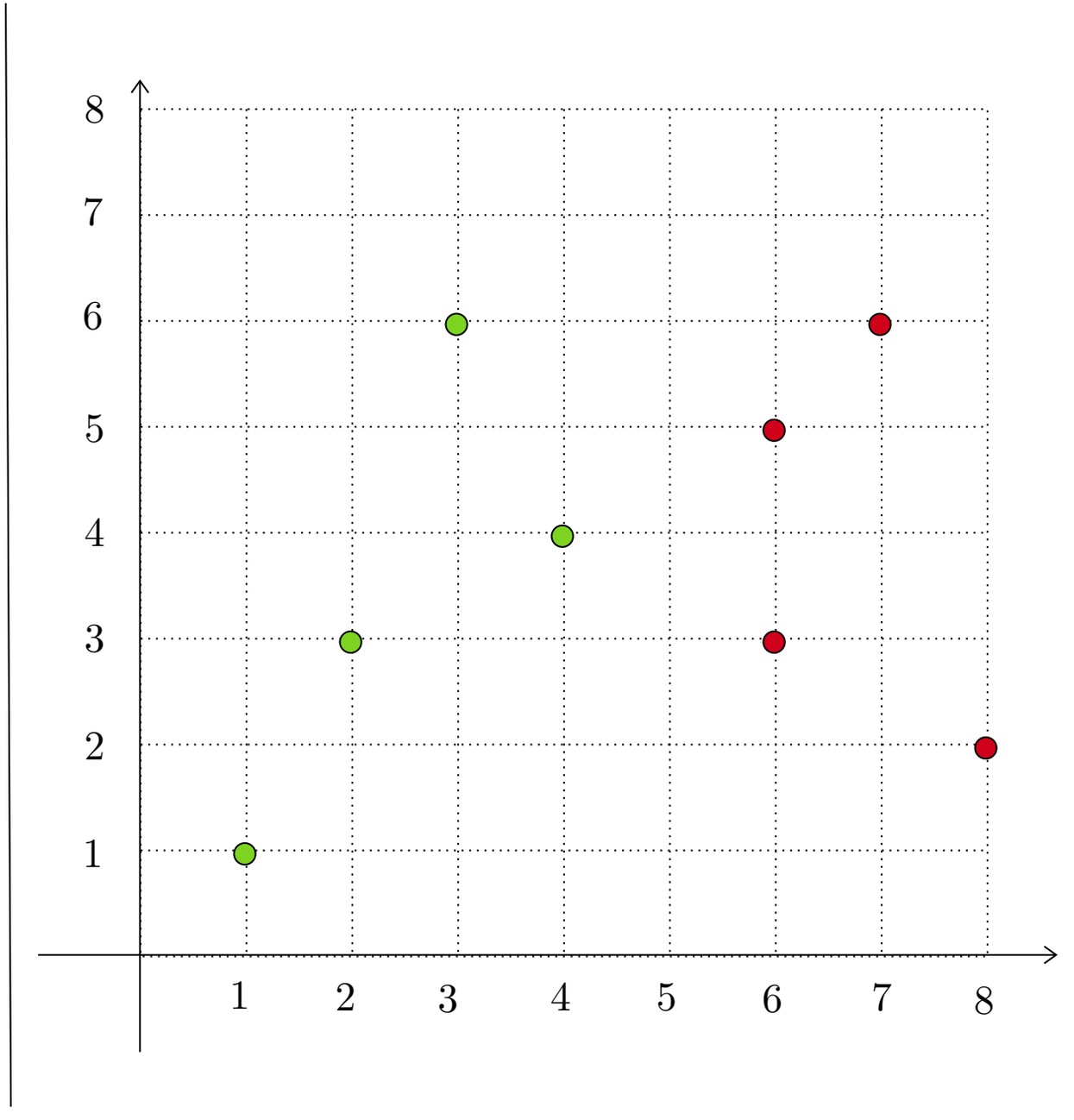
A Aniruddha
Indian Institute of Technology, Madras

Dataset

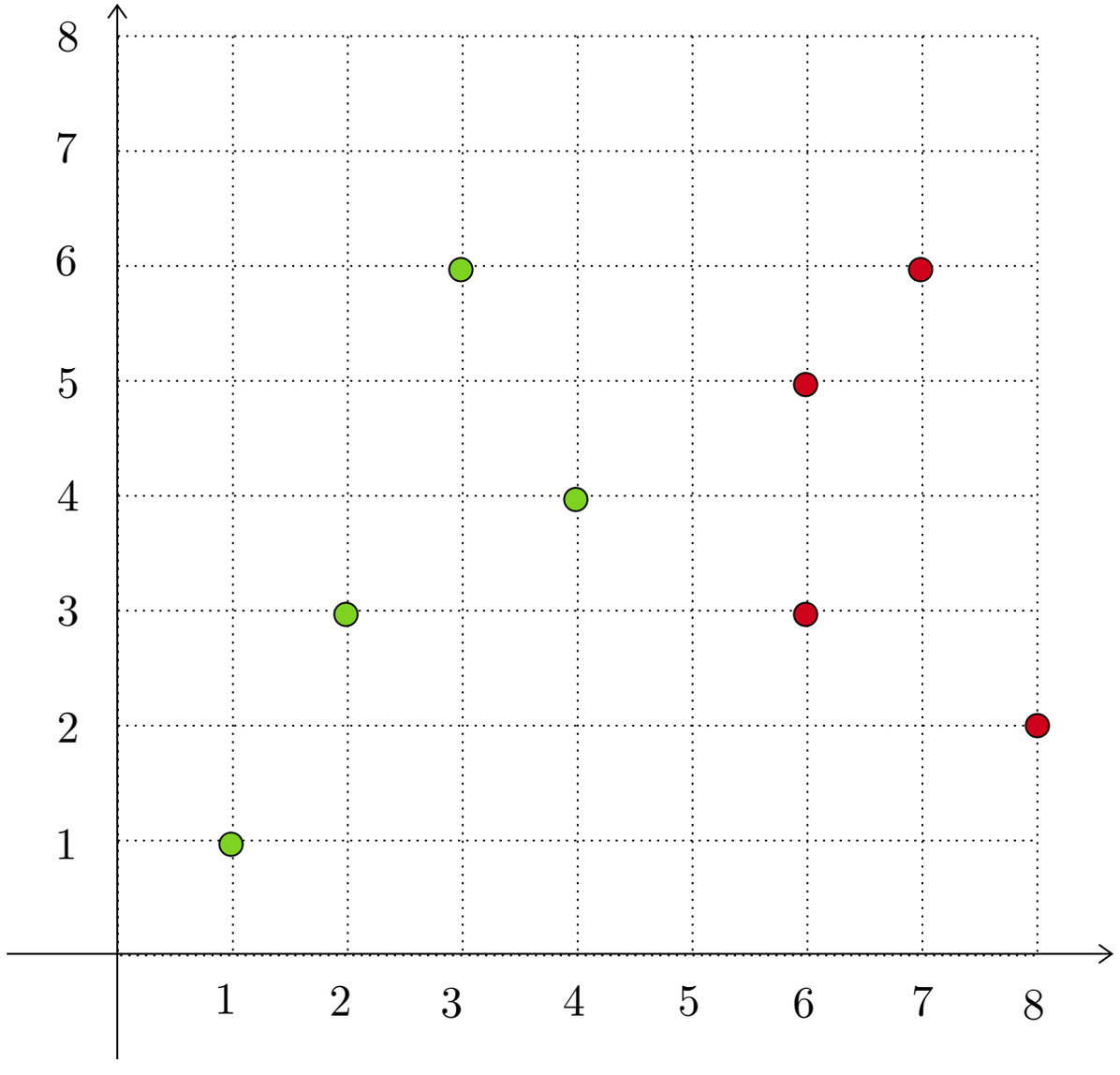
x_1	x_2	y
1	1	1
2	3	1
3	6	1
4	4	1
6	3	0
6	5	0
7	6	0
8	2	0

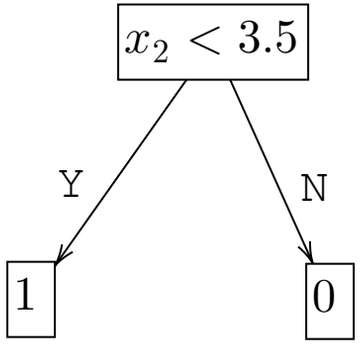
Dataset

x_1	x_2	y
1	1	1
2	3	1
3	6	1
4	4	1
6	3	0
6	5	0
7	6	0
8	2	0

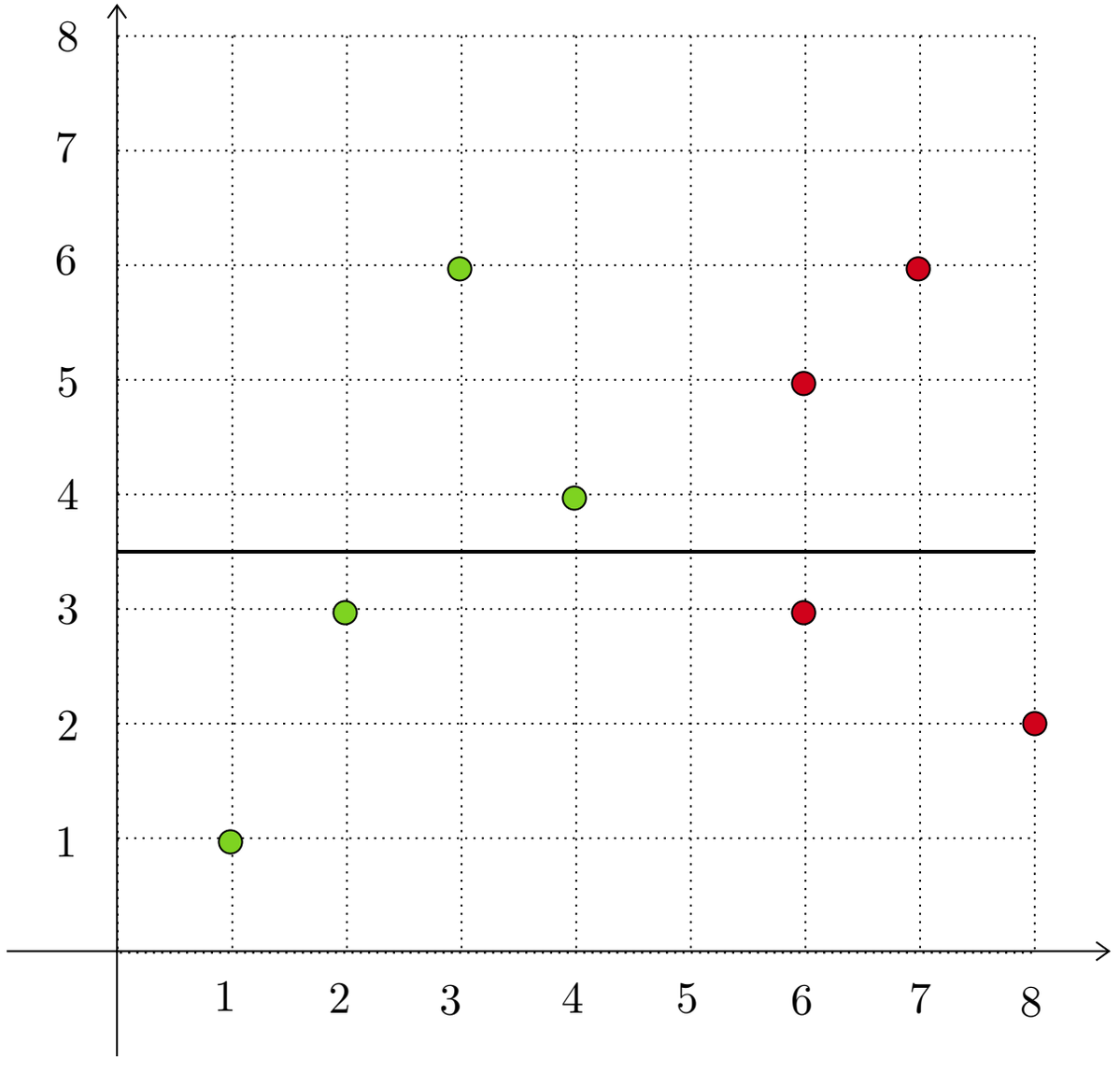


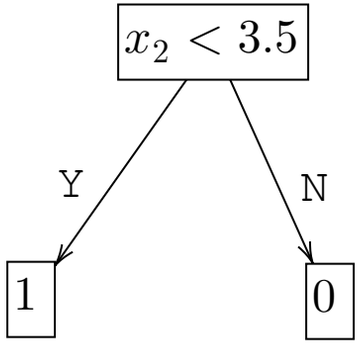
Model 1



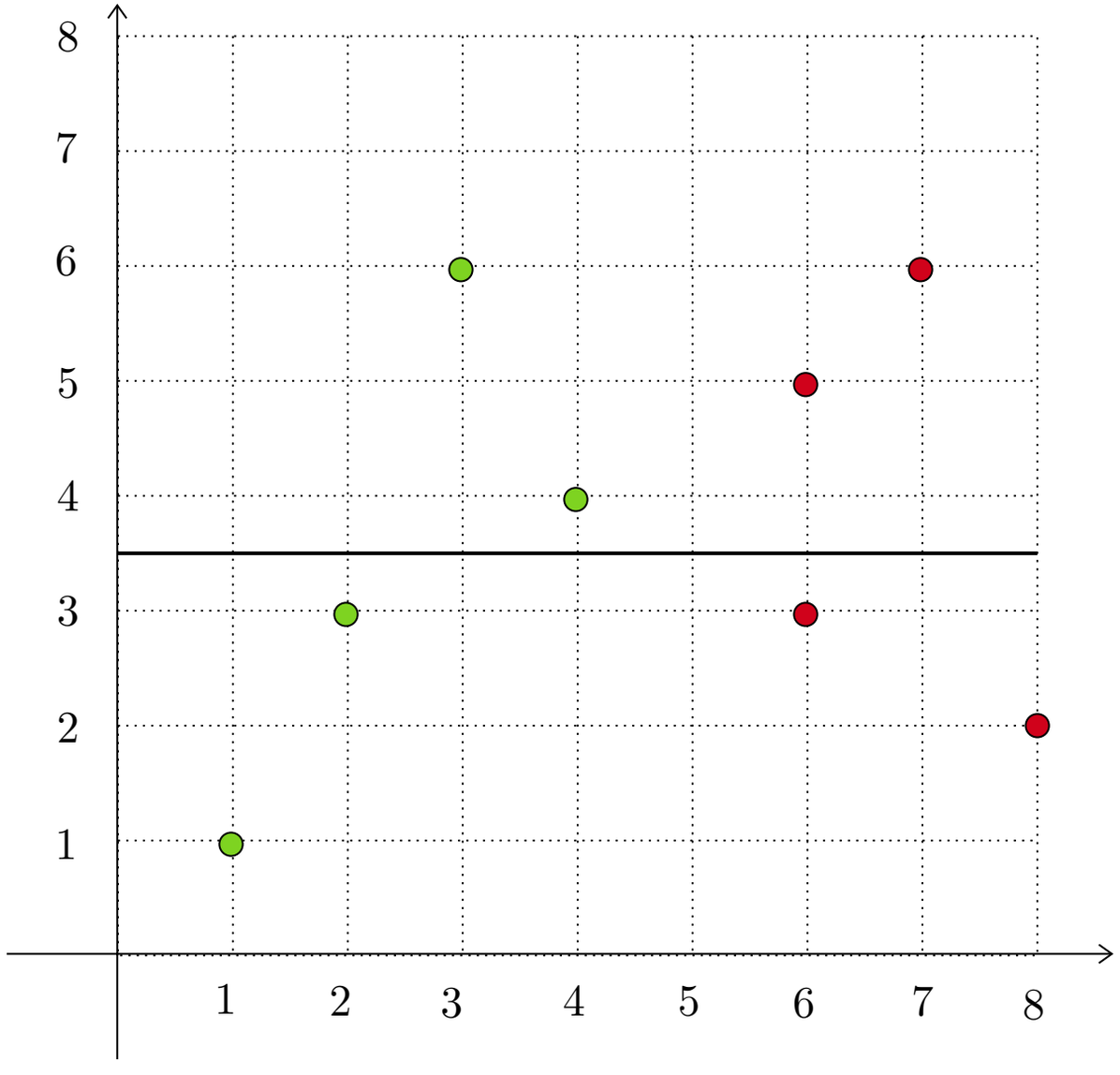


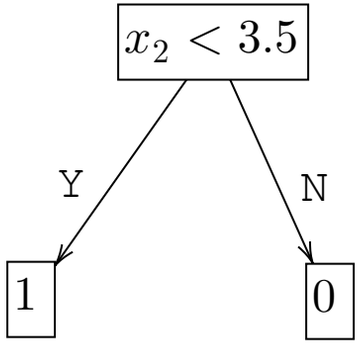
Model 1





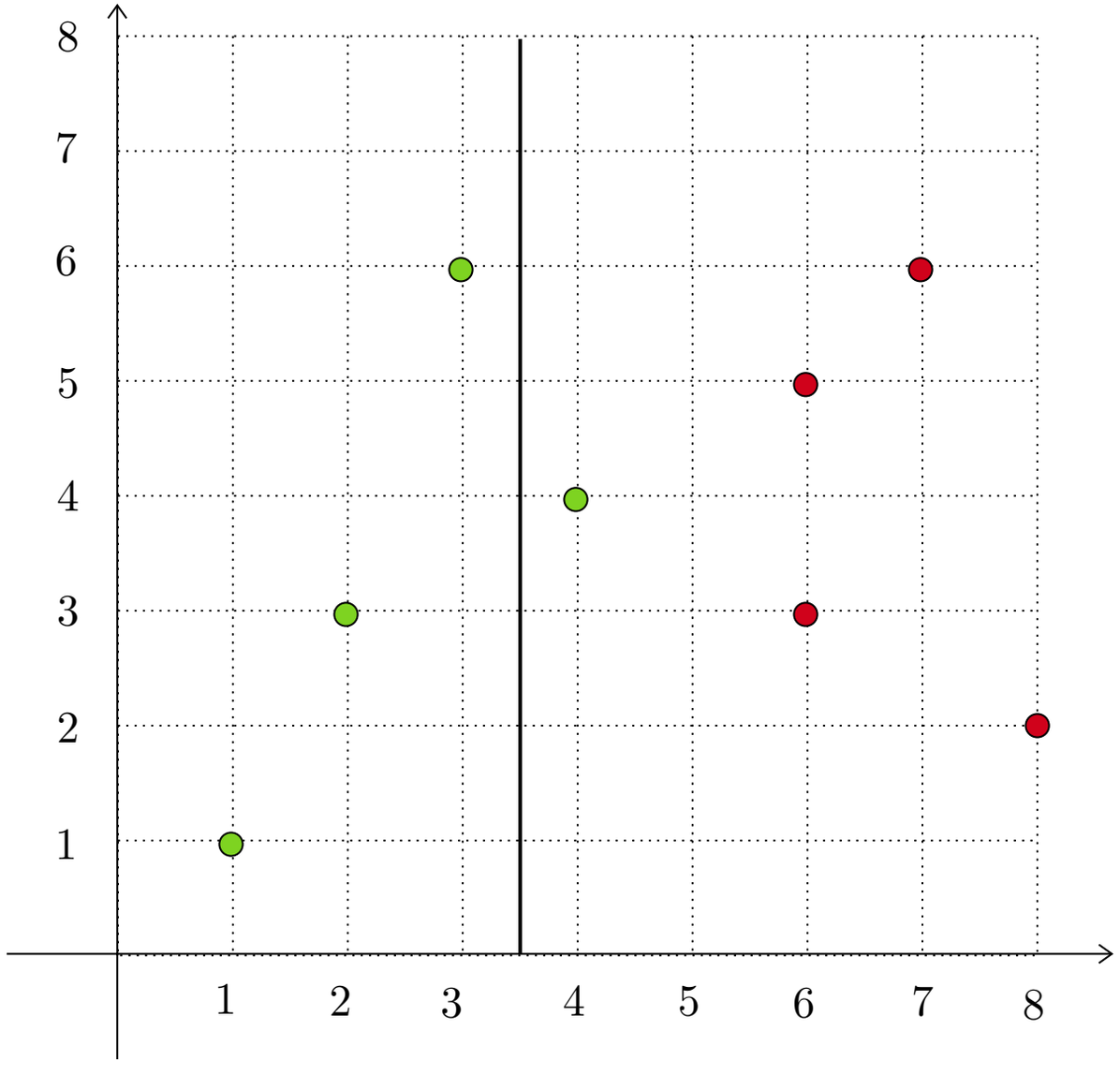
Model 1

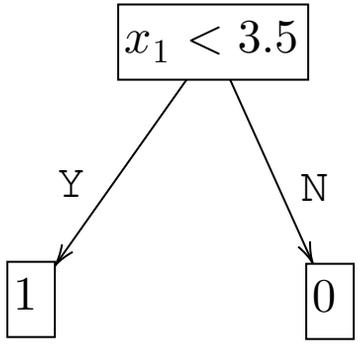




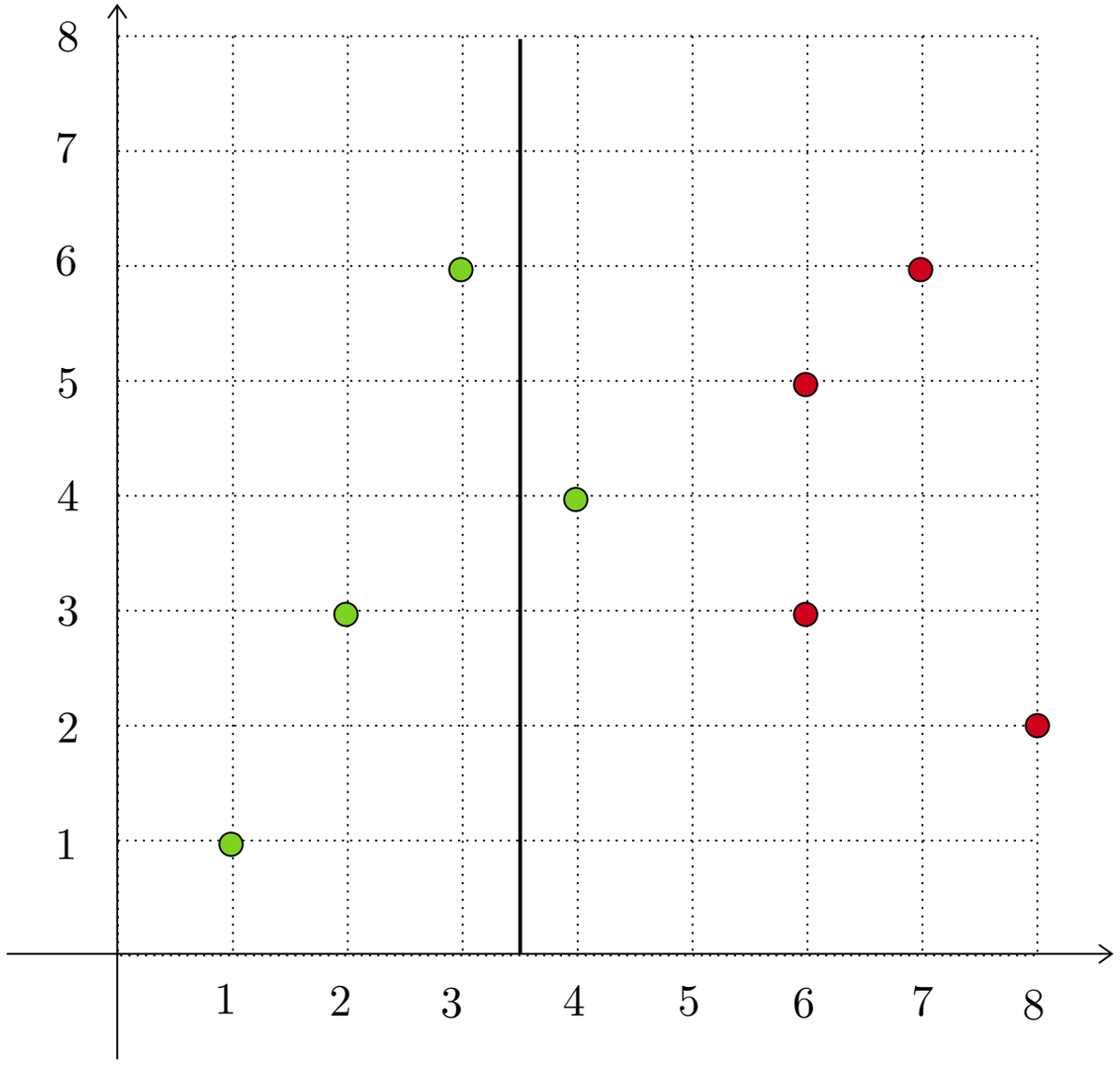
Feature 1	Feature 2	Label	Model 1 Predictions
1	1	1	1
2	3	1	1
3	6	1	0
4	4	1	0
6	3	0	1
6	5	0	0
7	6	0	0
8	2	0	1

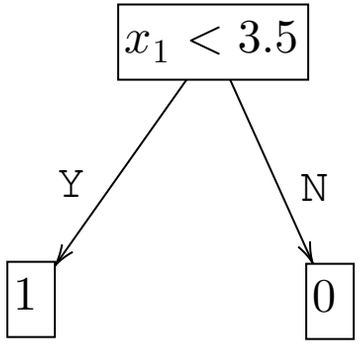
Model 2





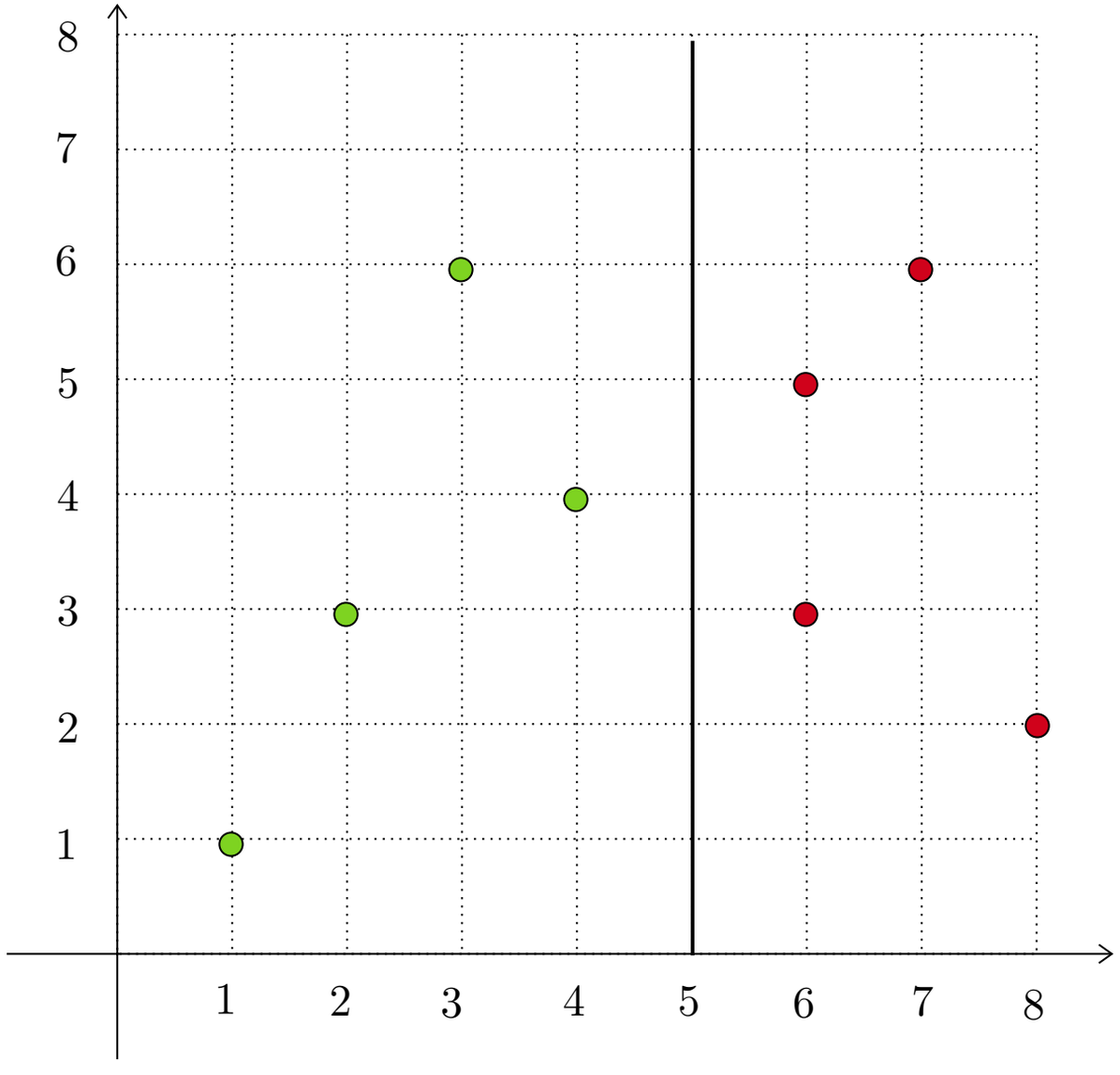
Model 2

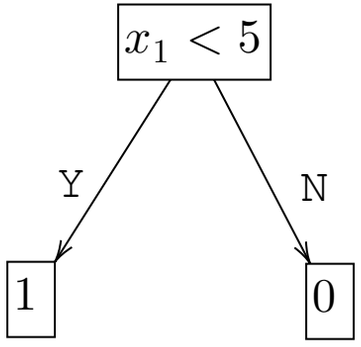




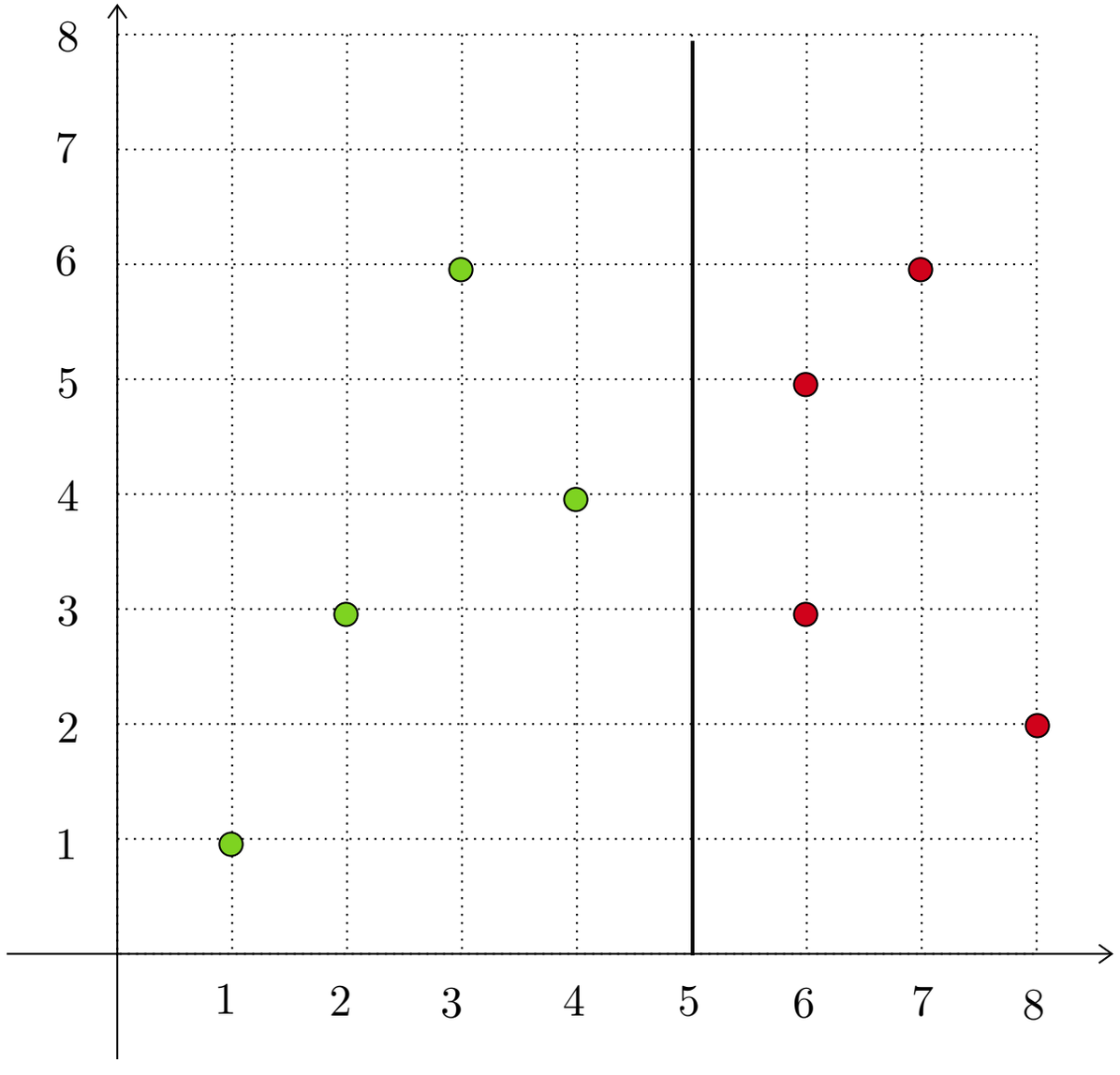
Feature 1	Feature 2	Label	Model 2 Predictions
1	1	1	1
2	3	1	1
3	6	1	1
4	4	1	0
6	3	0	0
6	5	0	0
7	6	0	0
8	2	0	0

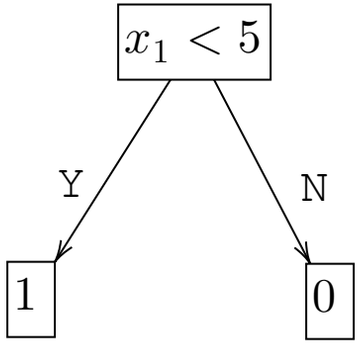
Model 3





Model 3





Feature 1	Feature 2	Label	Model 3 Predictions
1	1	1	1
2	3	1	1
3	6	1	1
4	4	1	1
6	3	0	0
6	5	0	0
7	6	0	0
8	2	0	0

How good is my model?

How good is my model?

Feature 1	Feature 2	Label	Model 1 Predictions	Model 2 Predictions	Model 3 Predictions
1	1	1	1	1	1
2	3	1	1	1	1
3	6	1	0	1	1
4	4	1	0	0	1
6	3	0	1	0	0
6	5	0	0	0	0
7	6	0	0	0	0
8	2	0	1	0	0

How good is my model?

Feature 1	Feature 2	Label	Model 1 Predictions	Model 2 Predictions	Model 3 Predictions
1	1	1	1	1	1
2	3	1	1	1	1
3	6	1	0	1	1
4	4	1	0	0	1
6	3	0	1	0	0
6	5	0	0	0	0
7	6	0	0	0	0
8	2	0	1	0	0

$$\text{Accuracy} = \frac{\text{No of correct predictions}}{\text{Total no of predictions}}$$

How good is my model?

Feature 1	Feature 2	Label	Model 1 Predictions	Model 2 Predictions	Model 3 Predictions
1	1	1	1	1	1
2	3	1	1	1	1
3	6	1	0	1	1
4	4	1	0	0	1
6	3	0	1	0	0
6	5	0	0	0	0
7	6	0	0	0	0
8	2	0	1	0	0

$$\begin{aligned}\text{Accuracy(Model 1)} &= \frac{4}{8} \\ &= 0.5\end{aligned}$$

$$50\%$$

How good is my model?

Feature 1	Feature 2	Label	Model 1 Predictions	Model 2 Predictions	Model 3 Predictions
1	1	1	1	1	1
2	3	1	1	1	1
3	6	1	0	1	1
4	4	1	0	0	1
6	3	0	1	0	0
6	5	0	0	0	0
7	6	0	0	0	0
8	2	0	1	0	0

$$\text{Accuracy(Model 1)} = \frac{4}{8} = 0.5$$

50%

$$\text{Accuracy(Model 2)} = \frac{7}{8} = 0.875$$

87.5%

How good is my model?

Feature 1	Feature 2	Label	Model 1 Predictions	Model 2 Predictions	Model 3 Predictions
1	1	1	1	1	1
2	3	1	1	1	1
3	6	1	0	1	1
4	4	1	0	0	1
6	3	0	1	0	0
6	5	0	0	0	0
7	6	0	0	0	0
8	2	0	1	0	0

$$\text{Accuracy(Model 1)} = \frac{4}{8} = 0.5$$

50%

$$\text{Accuracy(Model 2)} = \frac{7}{8} = 0.875$$

87.5%

$$\text{Accuracy(Model 3)} = \frac{8}{8} = 1$$

100%

Thank you