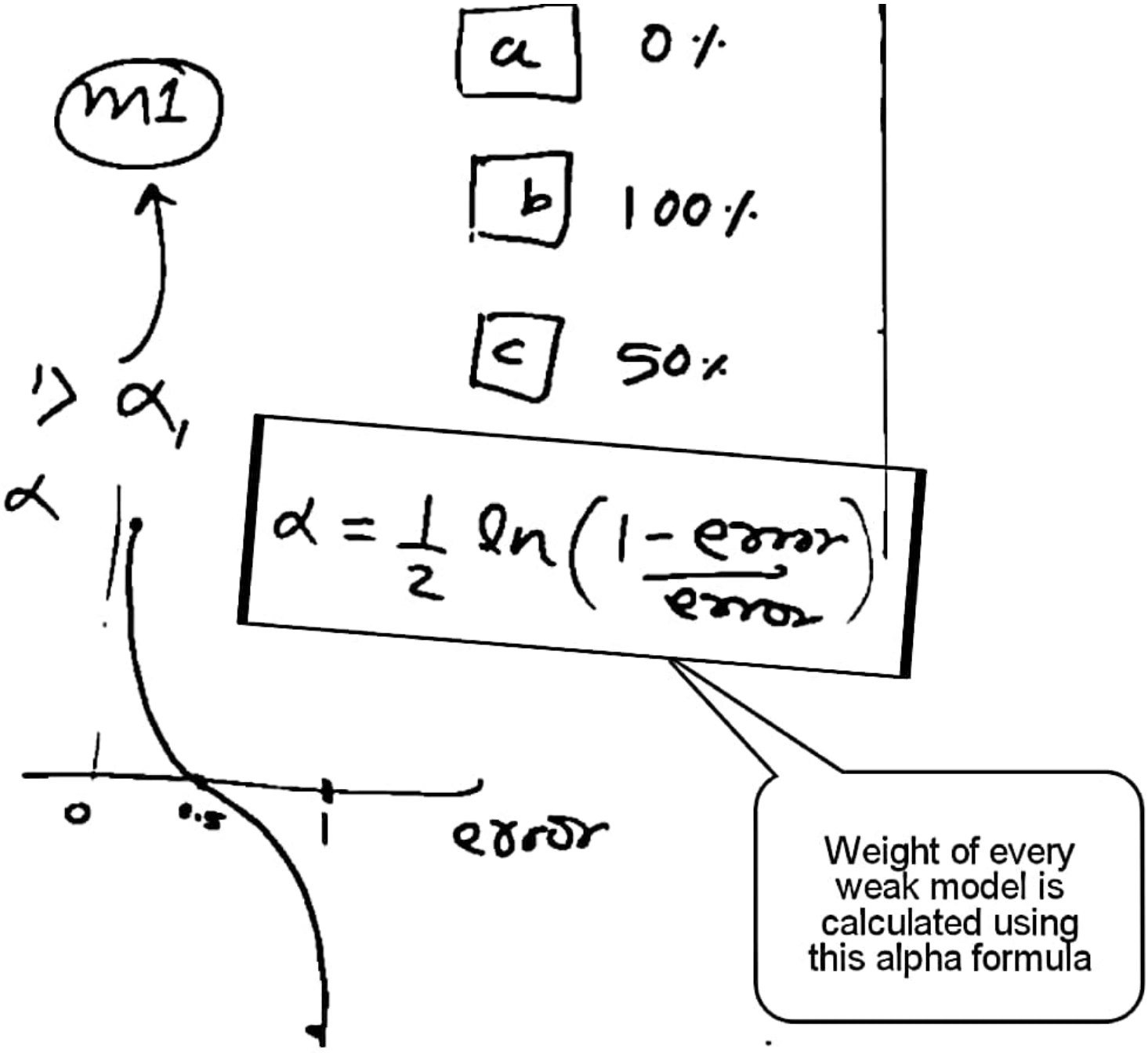
m1
a
0%
b
100%
c
50%
$\alpha = \frac{1}{2} \ln\left(\frac{1-error}{error}\right)$
α_1
α
0
0.5
1
error
Weight of every weak model is calculated using this alpha formula

AdaBoost - Step By Step

$n = 5$

X_1	X_2	Y	Y_pred	weight
3	7	1	1	0.2
2	9	0	1	0.2
1	4	1	0	0.2
9	8	0	0	0.2
7	7	0	0	0.2

$Wt = \frac{1}{5}$

$$\alpha = \frac{1}{2} \ln\left(\frac{1 - error}{error}\right)$$

m1

error = 0.4

Misclassified points

$$\alpha_1 = \frac{1}{2} \ln\left(\frac{1 - 0.4}{0.4}\right)$$

$$= \frac{1}{2} \ln\left(\frac{0.6}{0.4}\right)$$

$$= 0.20$$

Weight of model 1

$n = 5$

X_1	X_2	Y	new_wt	range
3	7	1	0.166	0 – 0.166
2	9	0	0.25	0.166 – 0.416
1	4	1	0.25	0.416 – 0.666
9	8	0	0.166	0.666 – 0.832
3	7	0	0.166	0.832 – 1.0

AdaBoost - Step By Step

$\alpha_1 = 0.20$

$\alpha_2 \; \alpha_3 \ldots \alpha_n \rightarrow$

range
0 – 0.166
0.166 – 0.416
0.416 – 0.666
6 – 0.832
1.0

5 random no.

0 and 1

0.13

0.43

0.62

0.50

0.8

Randomly Selected Rows for model 2

1, 3, 3, 3, 4

1, 3, 3, 2, 2

$P = \alpha_1 h_1(x) + \alpha_2 h_2(x) + \ldots \alpha_n h_n(x)$