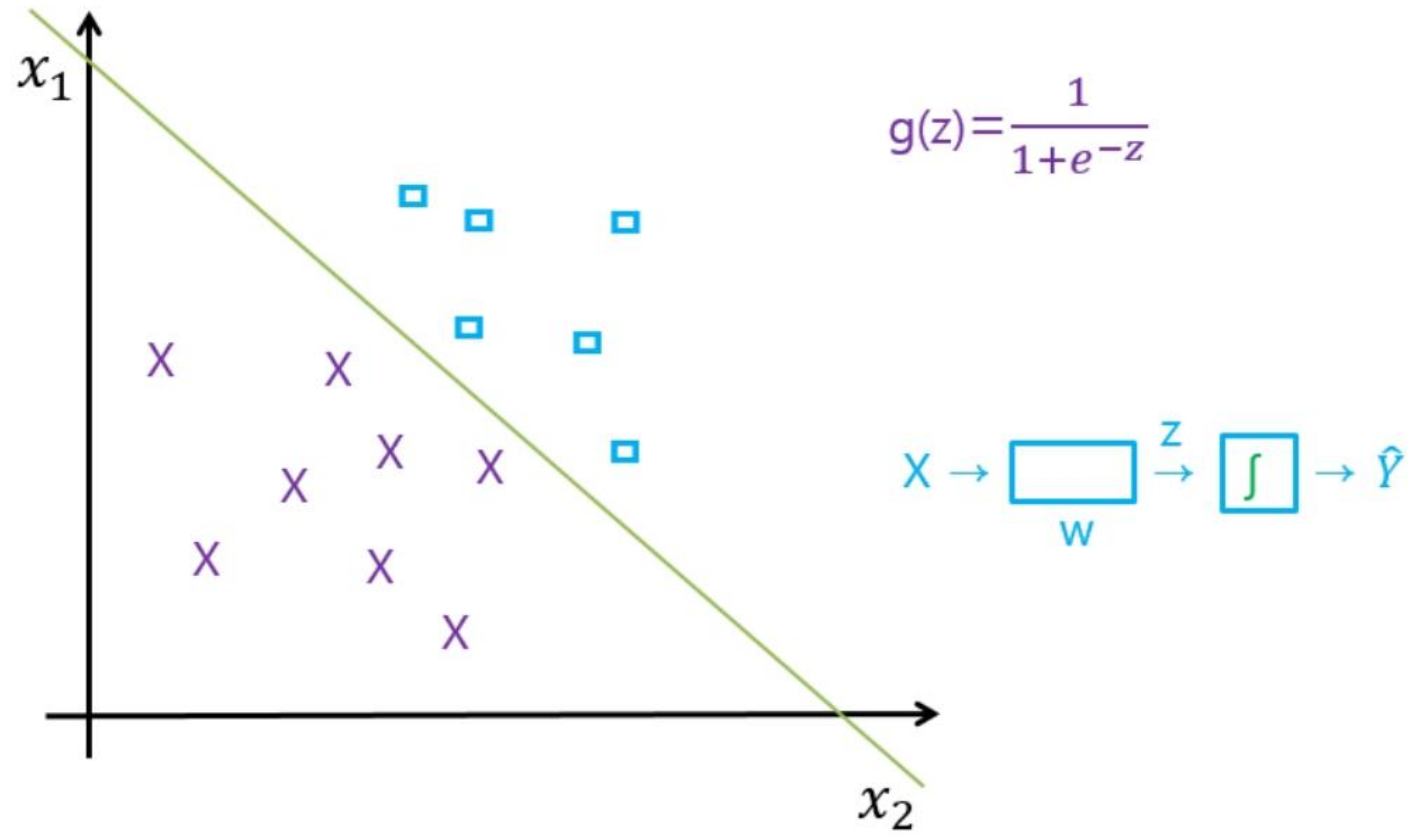


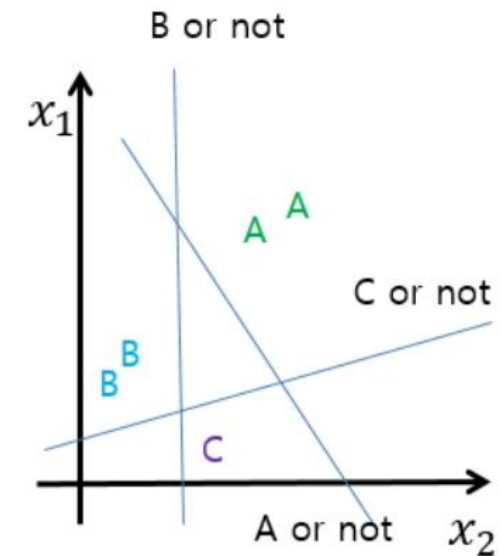
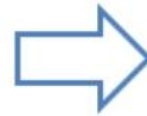
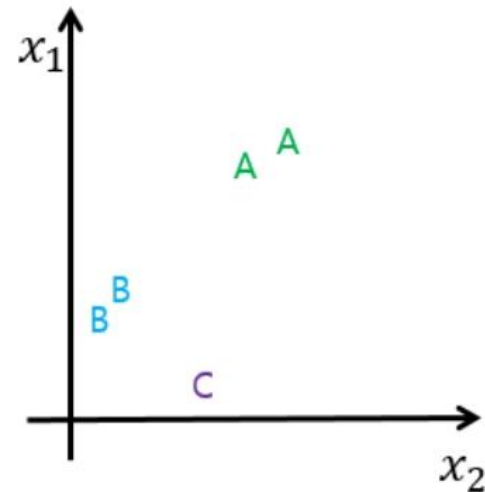
softmax

LOGISTIC REGRESSION

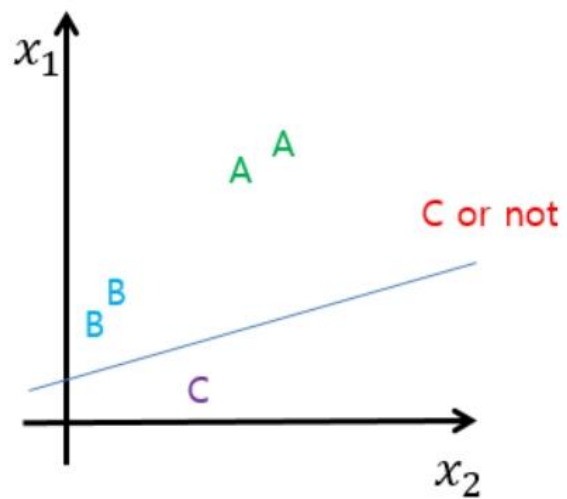


MULTINOMIAL CLASSIFICATION

x_1 (hours)	x_2 (attendance)	y (grade)
10	5	A
9	5	A
3	2	B
2	4	B
11	1	C

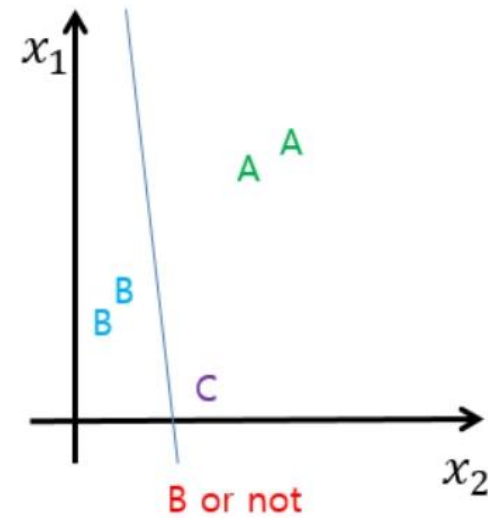


MULTINOMIAL CLASSIFICATION



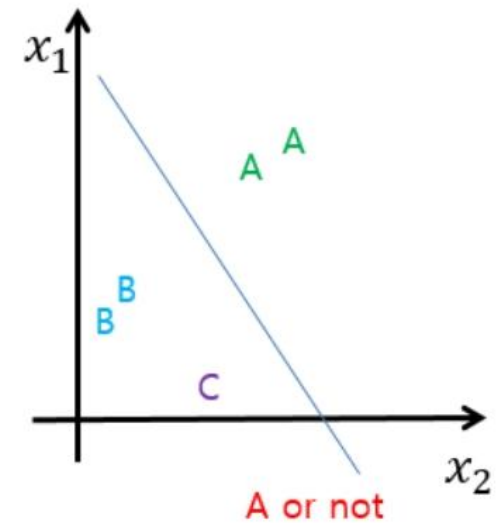
$$X \rightarrow \boxed{} \rightarrow \hat{Y}$$

A



$$X \rightarrow \boxed{} \rightarrow \hat{Y}$$

B



$$X \rightarrow \boxed{} \rightarrow \hat{Y}$$

C

X1	X2
----	----

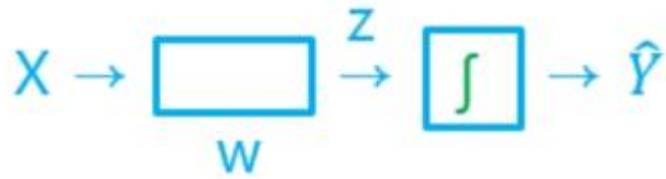
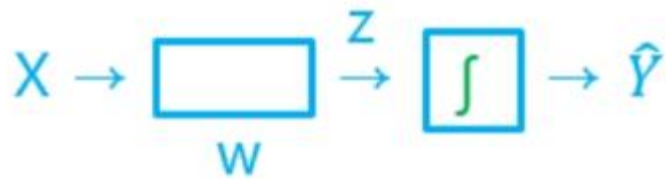
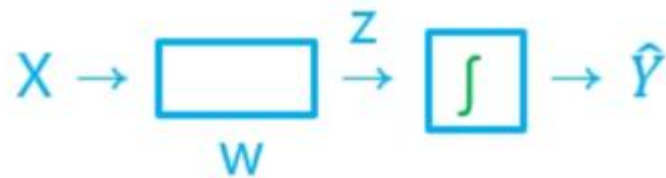
Wa1
Wa2

X1	X2
----	----

Wb1
Wb2

X1	X2
----	----

Wc1
Wc2

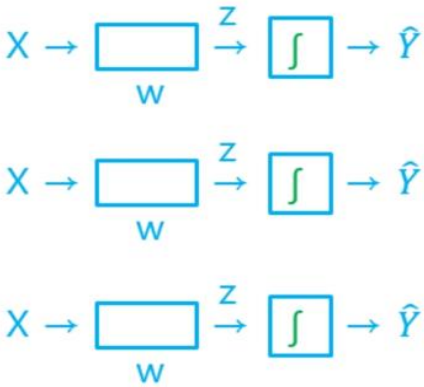


X1	X2
----	----

wa1	wb1	wc1
wa2	wb2	wc2

=

X1*Wa1 + X2*Wa2
X1*Wb1 + X2*Wb2
X1*Wc1 + X2*Wc2



SIGMOID?

LOGISTIC
CLASSIFIER

$$WX = Y \quad \begin{bmatrix} 2.0 \\ 1.0 \\ 0.1 \end{bmatrix}$$

$p = 0.7$



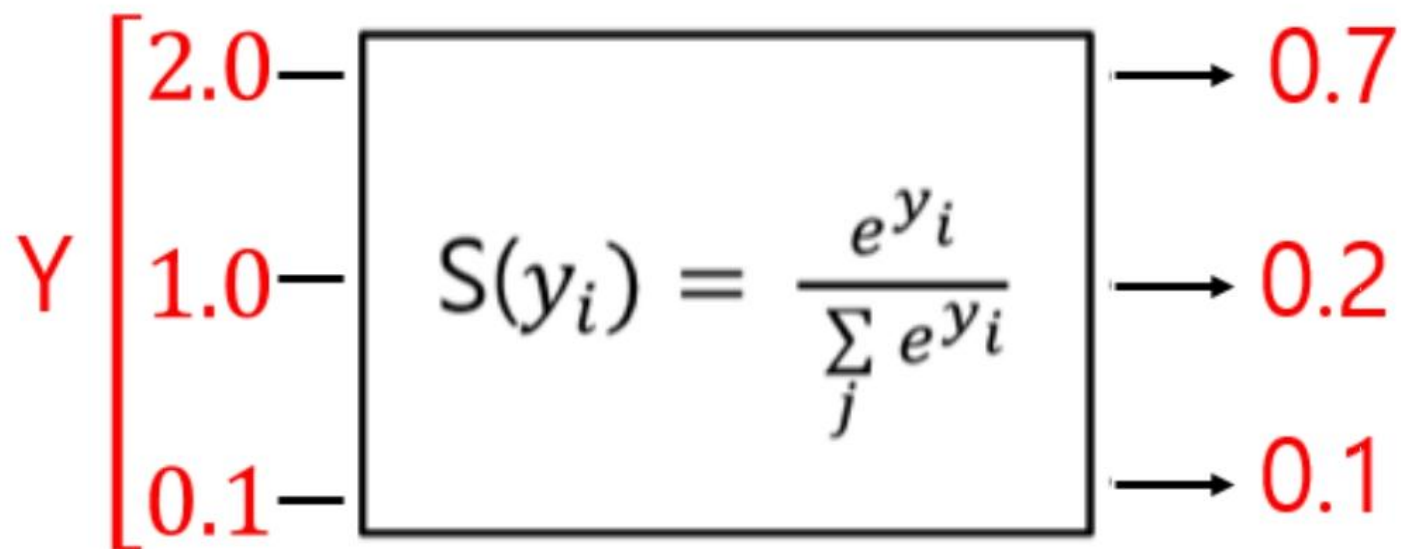
$p = 0.2$



$p = 0.1$



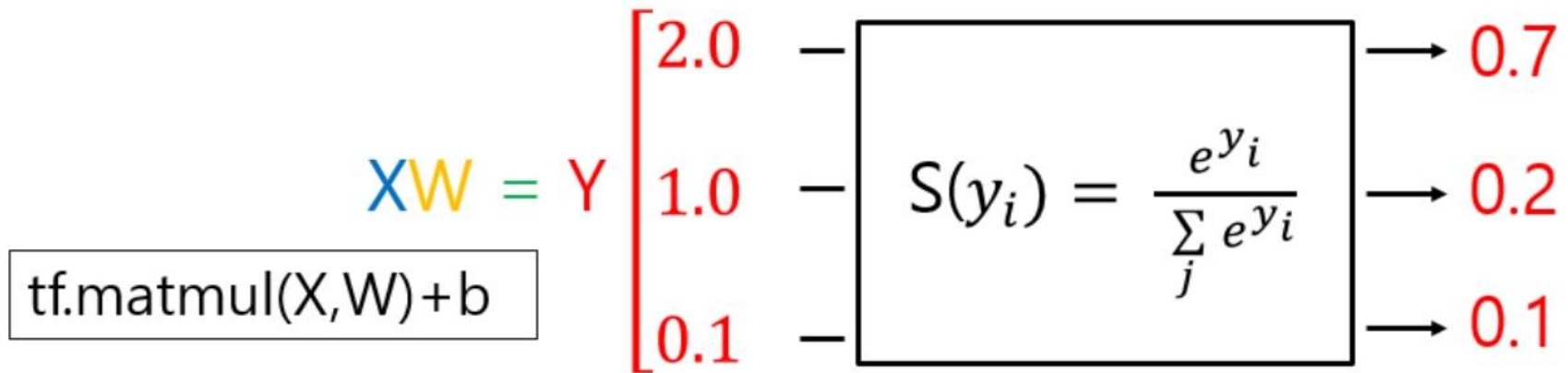
SOFTMAX



SCORES \longrightarrow PROBABILITIES

SOFTMAX

hypothesis = tf.nn.**softmax**(tf.matmul(X,W)+b)



SCORES \longrightarrow PROBABILITIES