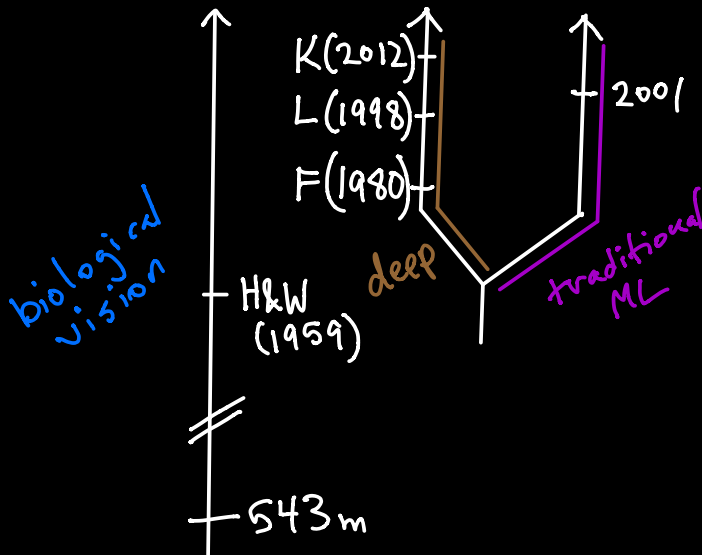
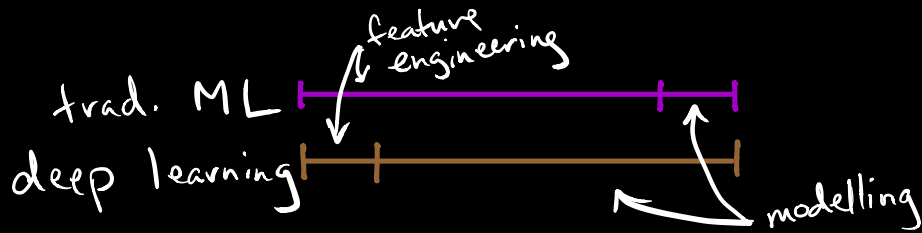
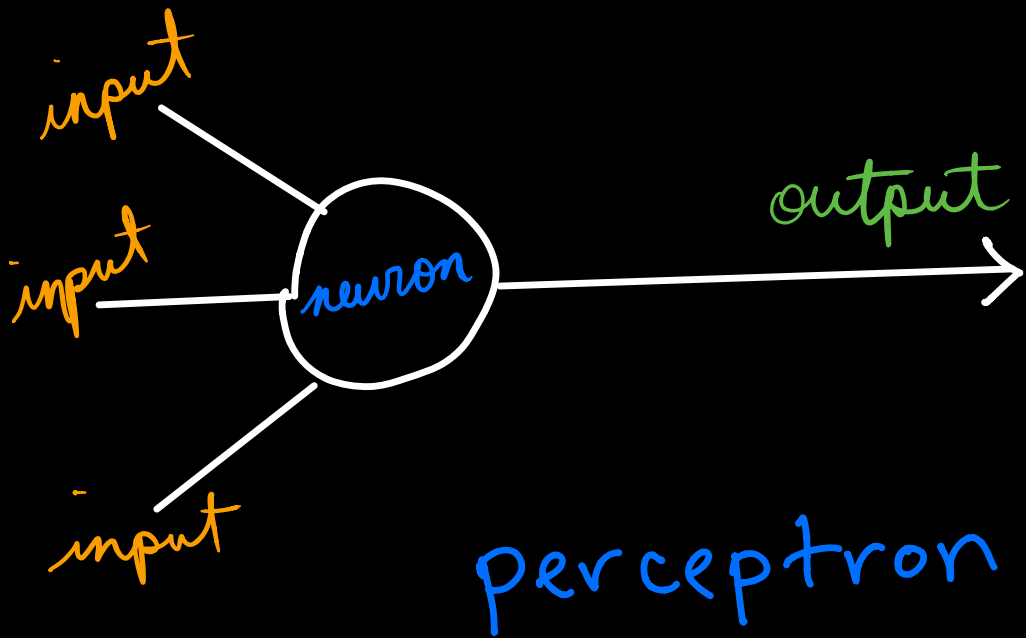
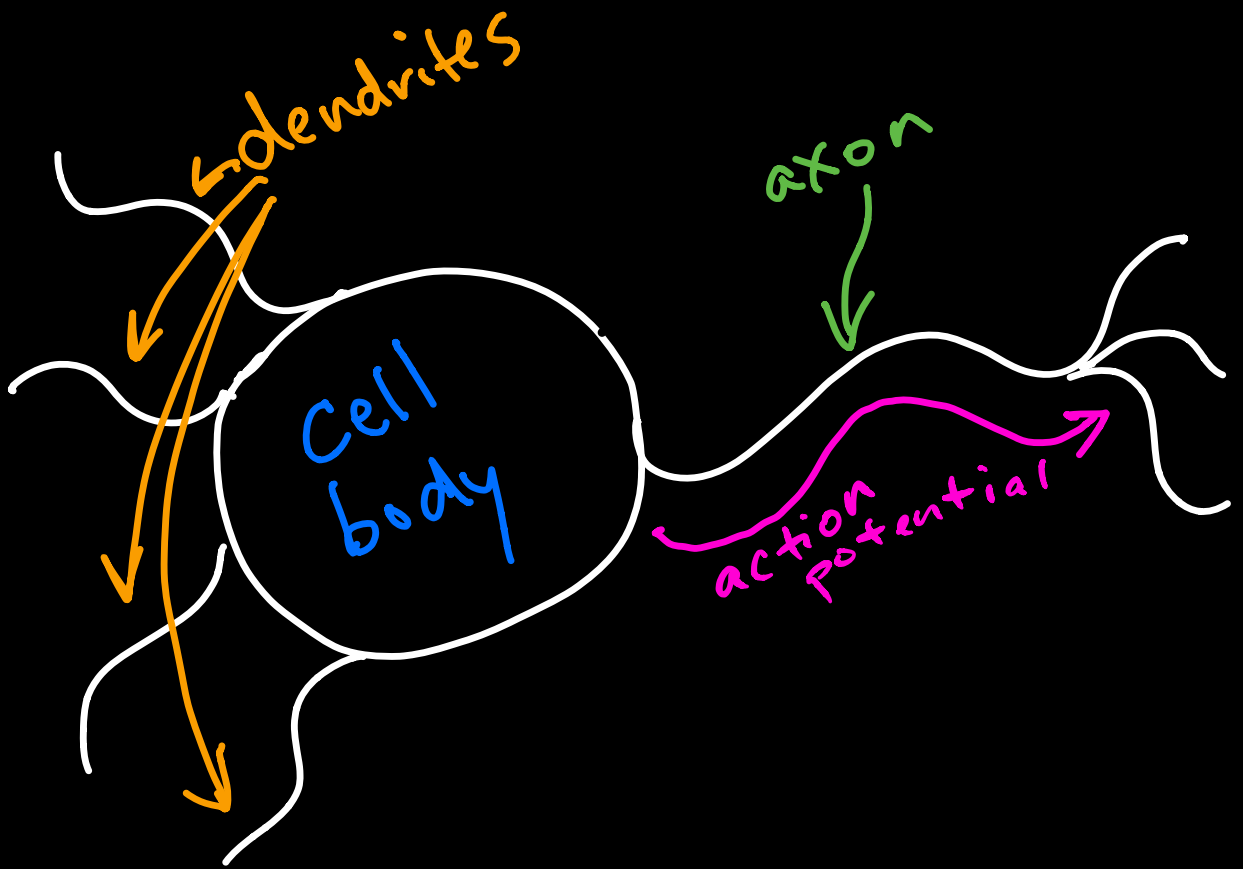
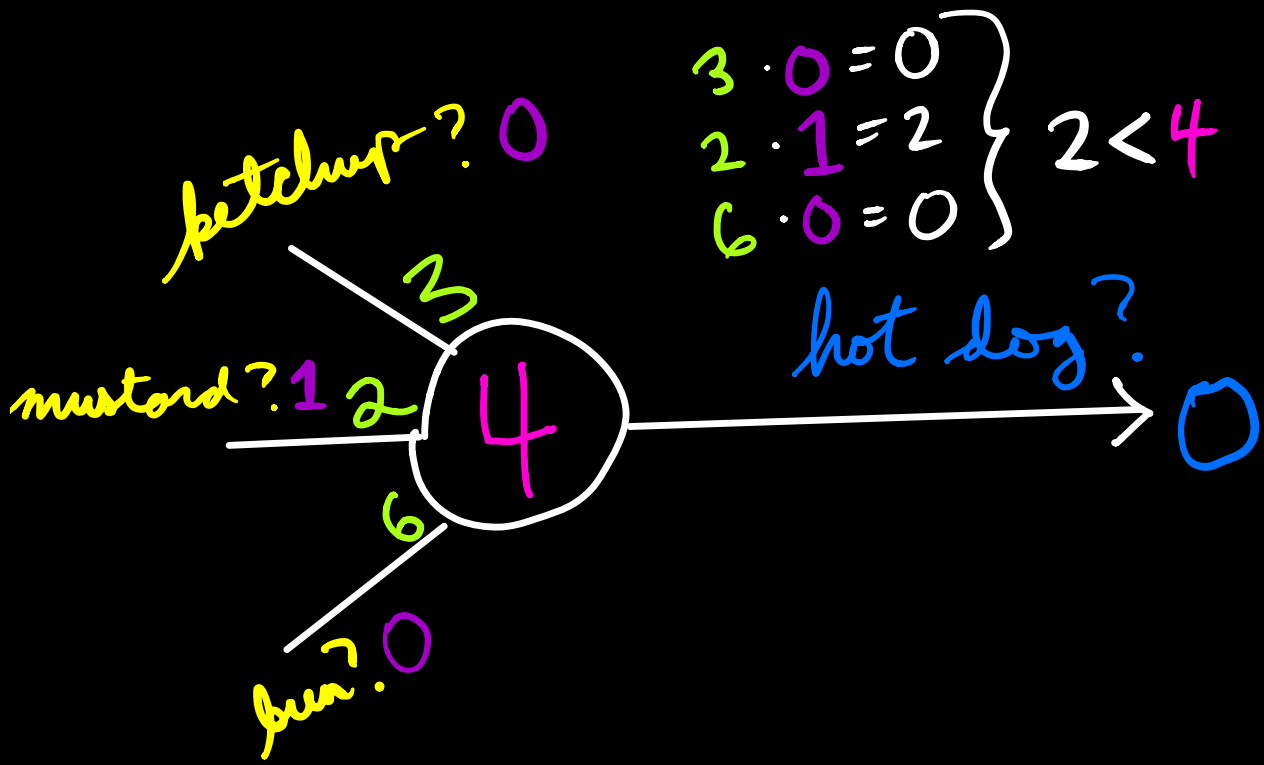
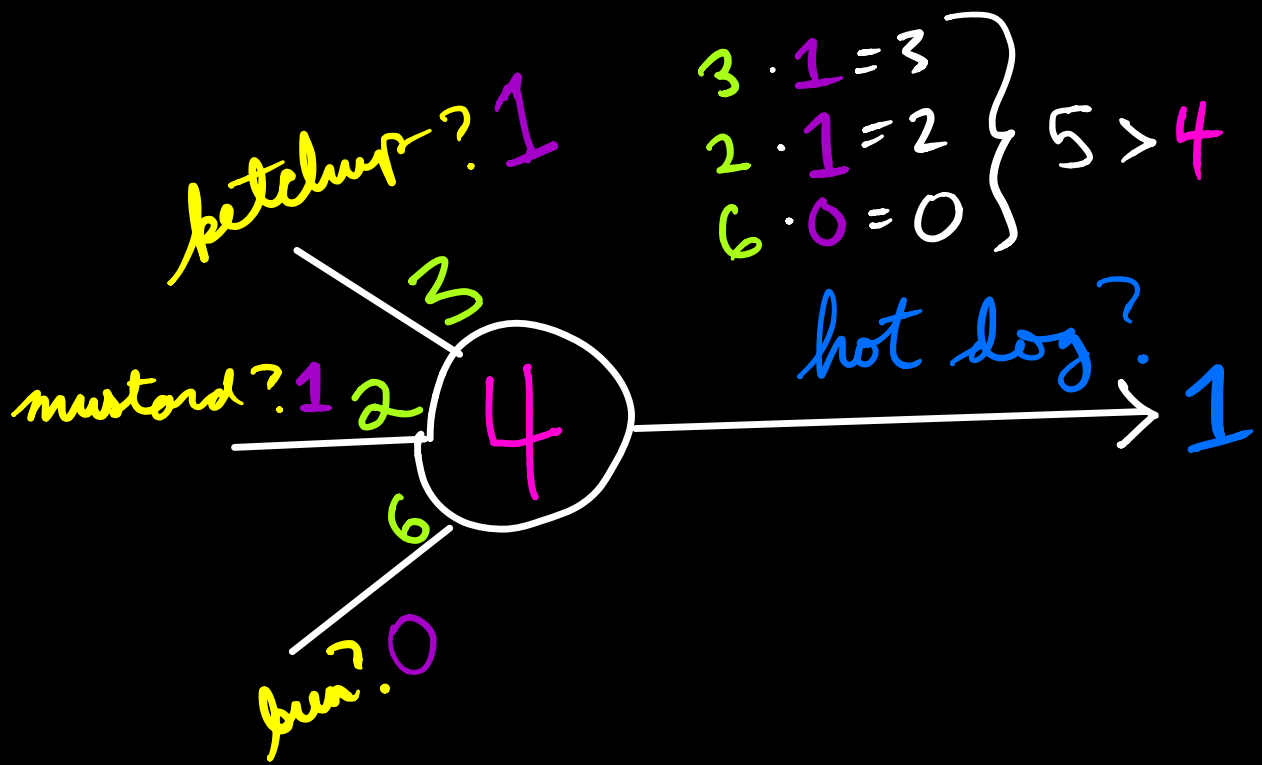


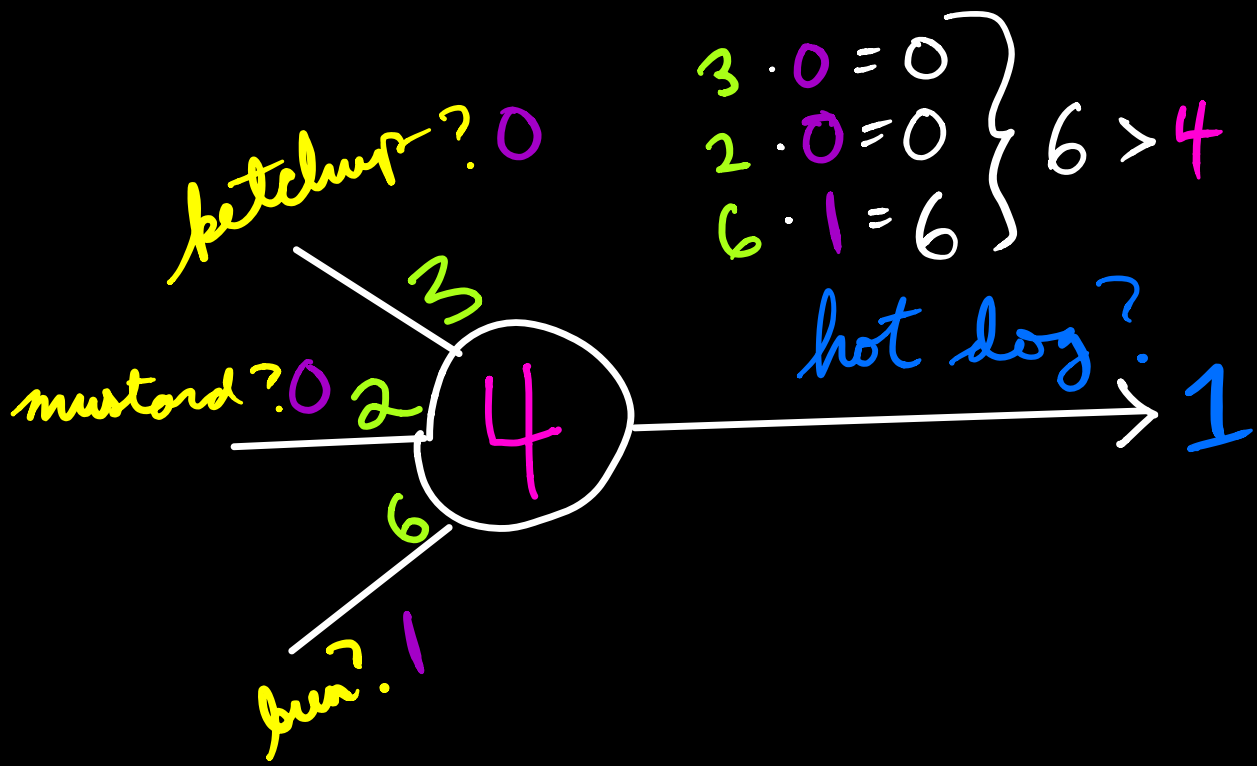
untapt

JON KROHN'S  
"Fundamentals of  
Deep Learning"  
Reference PDF  
(jonkrohn.com)







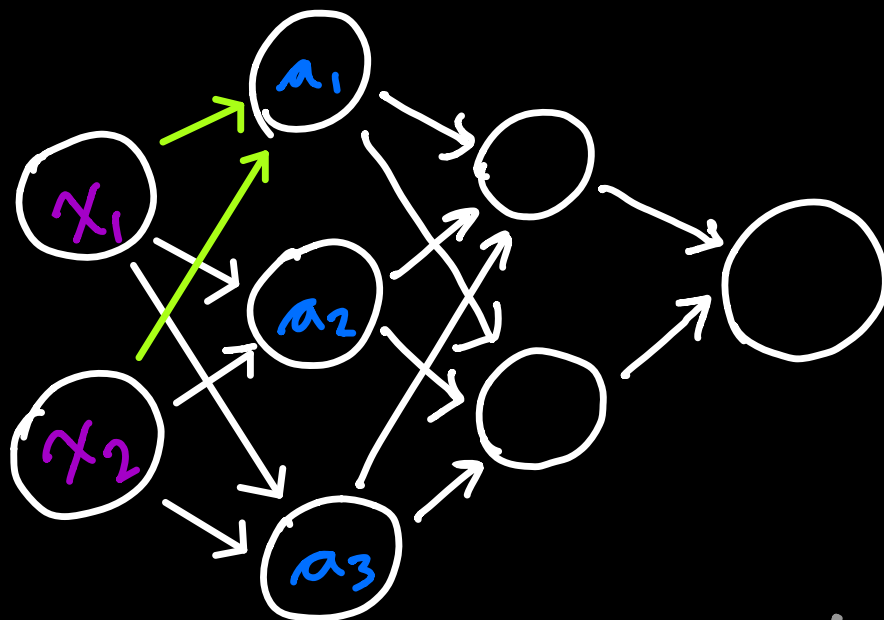


if  $\sum_{i=1}^n w_i x_i > \text{threshold}$ , output 1  
 otherwise, output 0

$$b \equiv -\text{threshold}$$

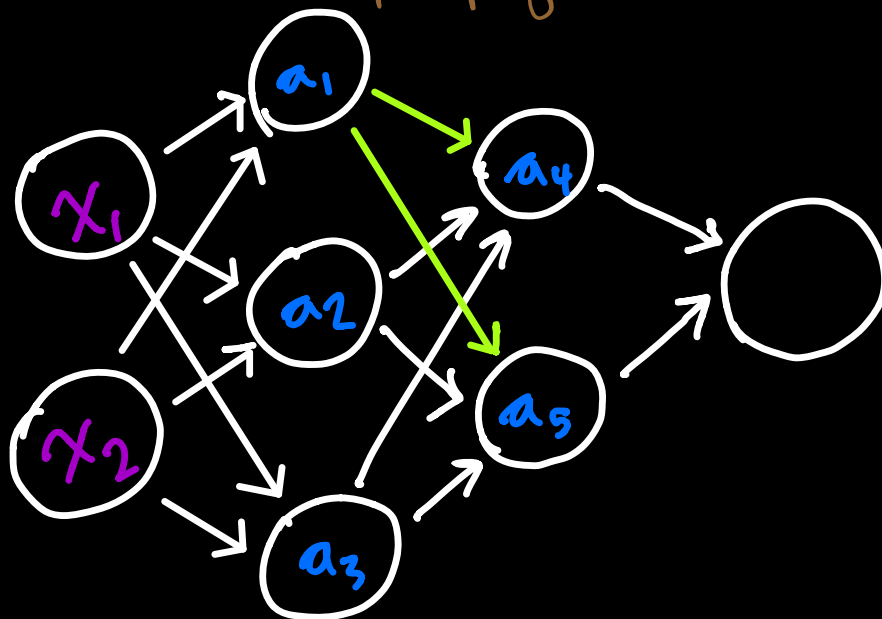
output  $\begin{cases} 1 & \text{if } w \cdot x + b > 0 \\ 0 & \text{otherwise} \end{cases}$

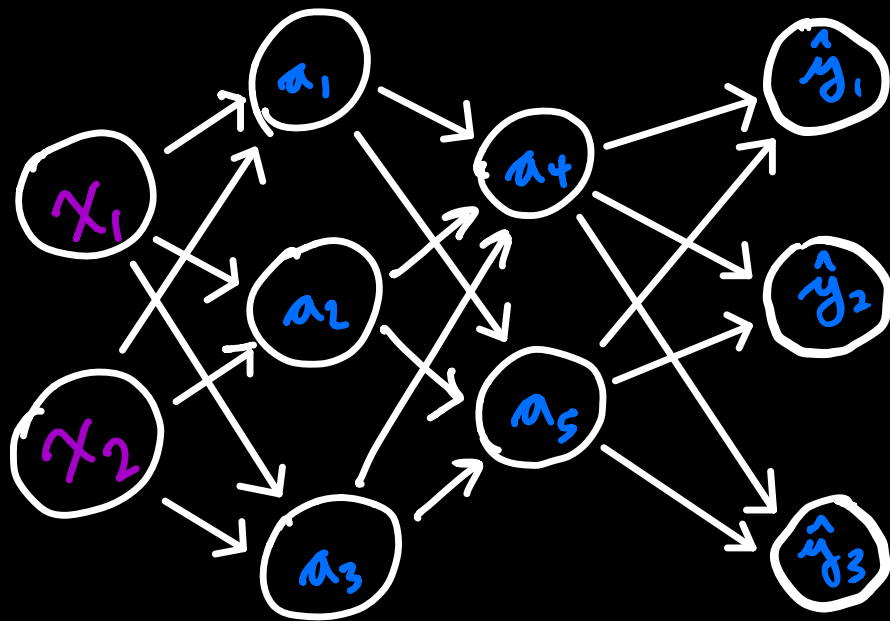
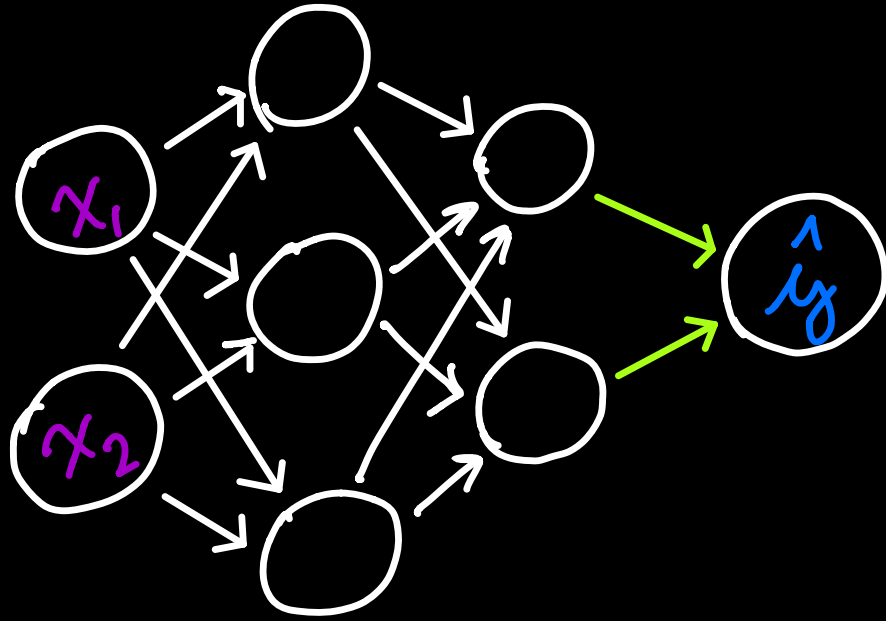
$$w \cdot x + b$$

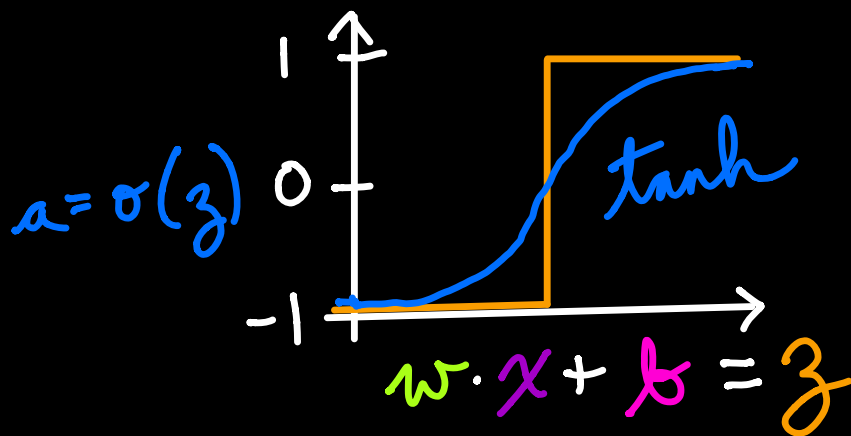
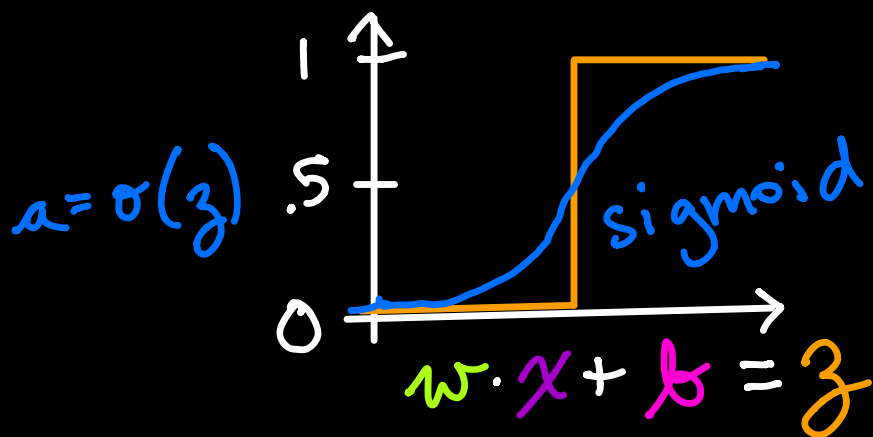
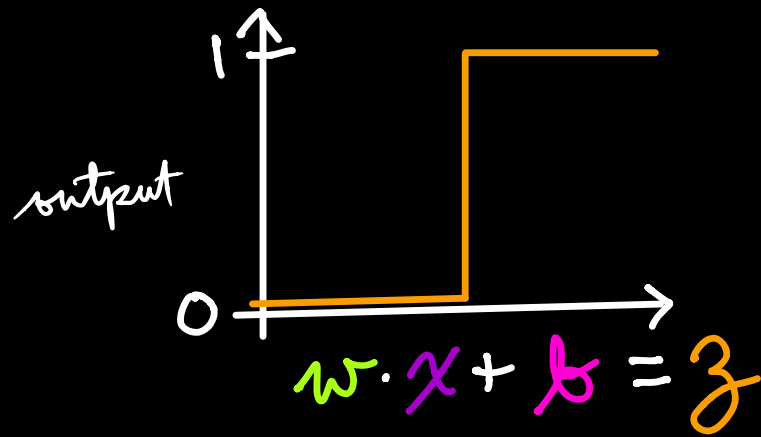


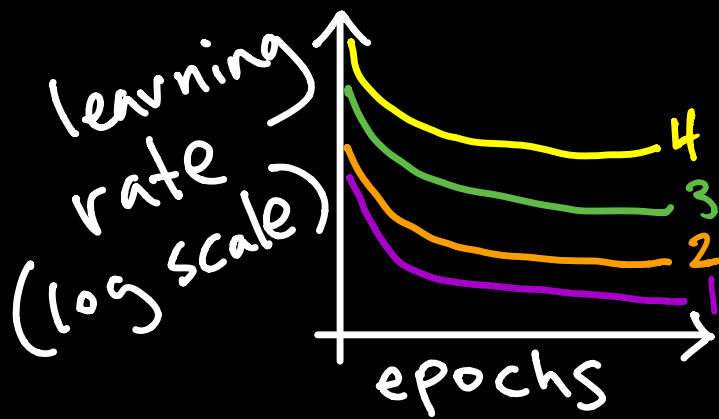
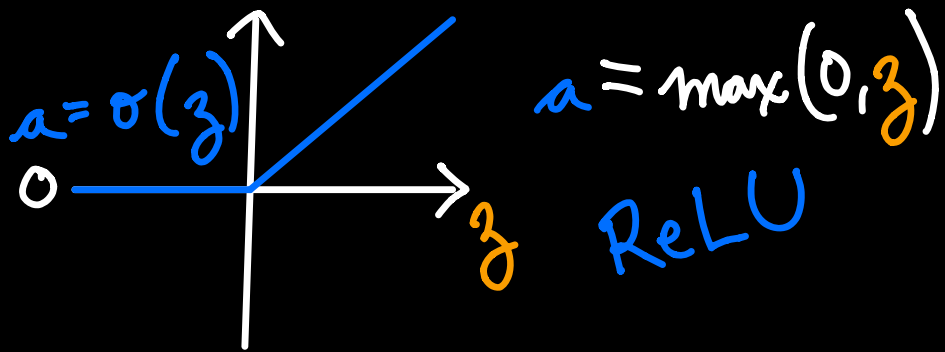
layer 1      2      3      4  
 hidden layer 1      2

forward propagation →  
 ← backpropagation

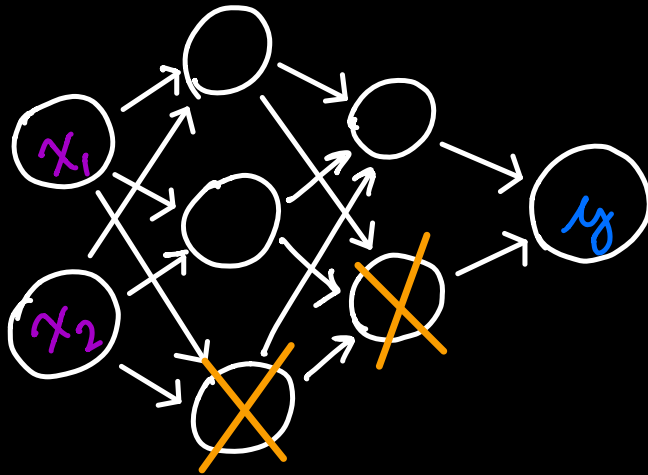
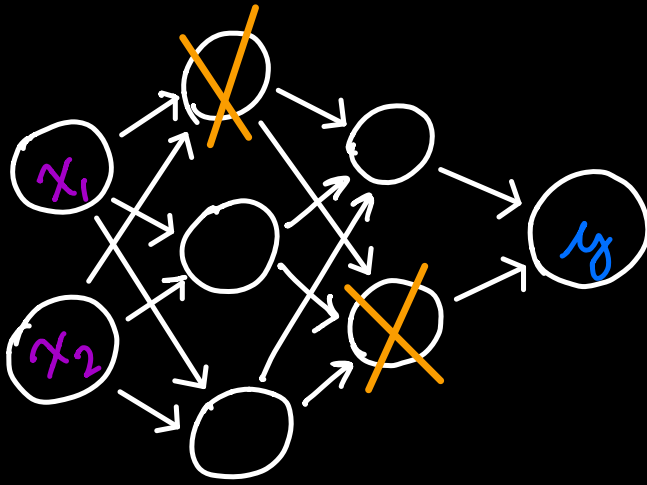
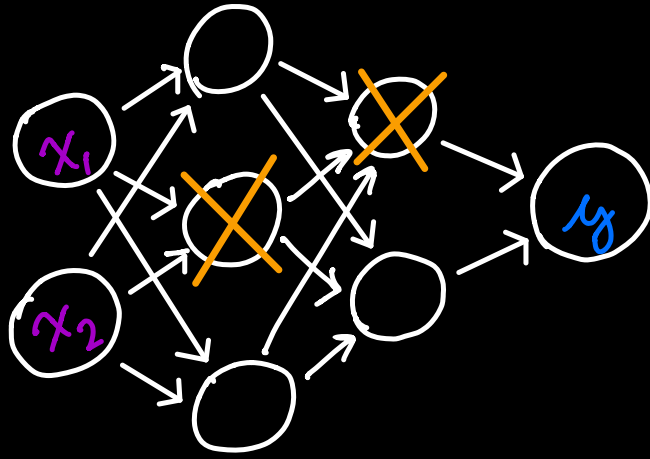


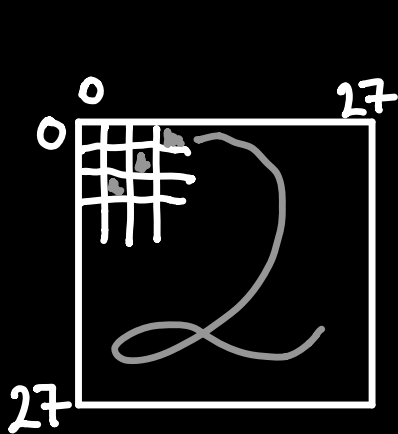












MNIST

$28 \times 28 = 784$  input

↓  
64 sigmoid hidden

↓  
10 softmax output

$$w \cdot x + b$$

