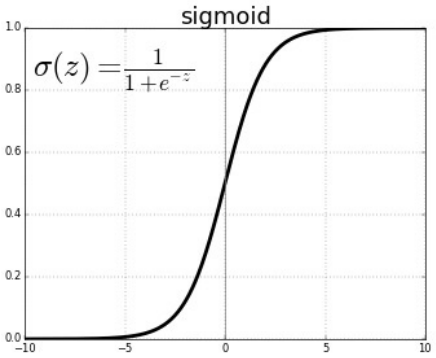
Activation Functions

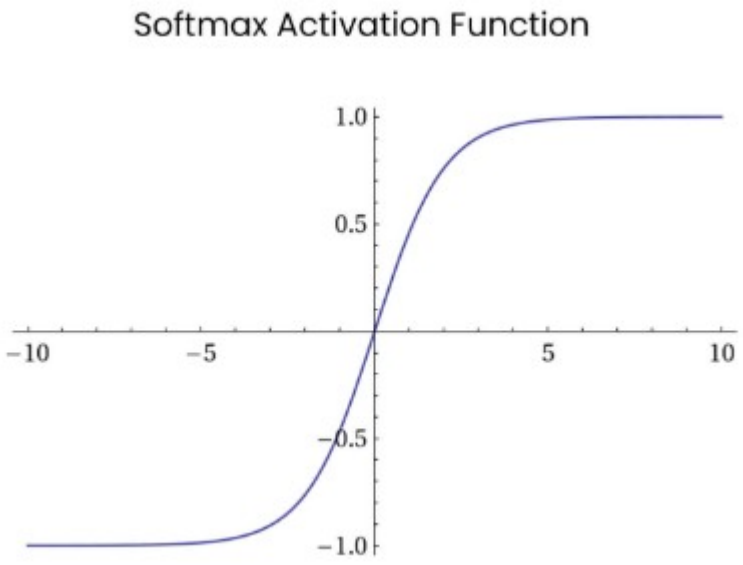
Sigmoid:

The sigmoid activation function provides an output in the range of 0 to 1.

Any Artificial Neuron with sigmoid activation function becomes sigmoid Neuron. The advantage is that small gradual changes in parameters, cause small gradual changes.



Softmax:



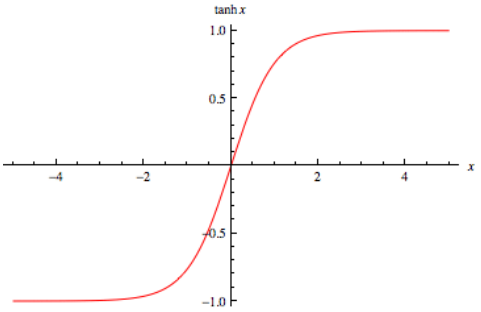
$$\sigma(\vec{z})_i = \frac{e^{z_i}}{\sum_{j=1}^{K} e^{z_j}}$$

Softmax is used for multi-label classification.

Tanh:

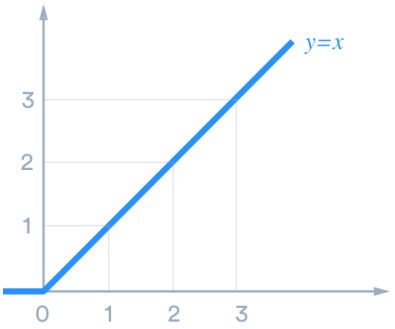
The tanh function is governed by the following equation.

$$\tanh x = \frac{\sinh x}{\cosh x} = \frac{e^x - e^{-x}}{e^x + e^{-x}},$$



It is similar to sigmoid [0,1] but the output is in the range of [-1,1]

RELU:
Rectified Linear Unit.
g= max(0,z)



piece-wise linear activation.