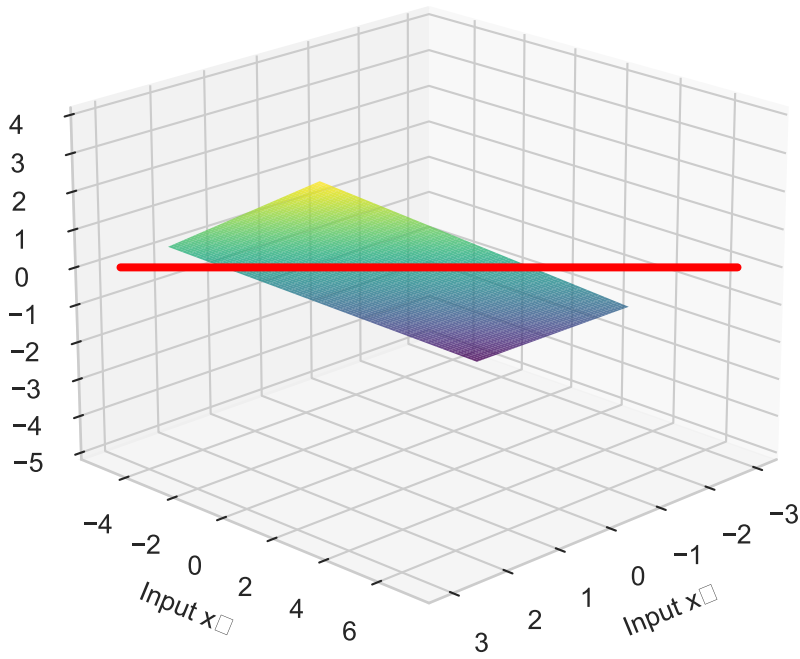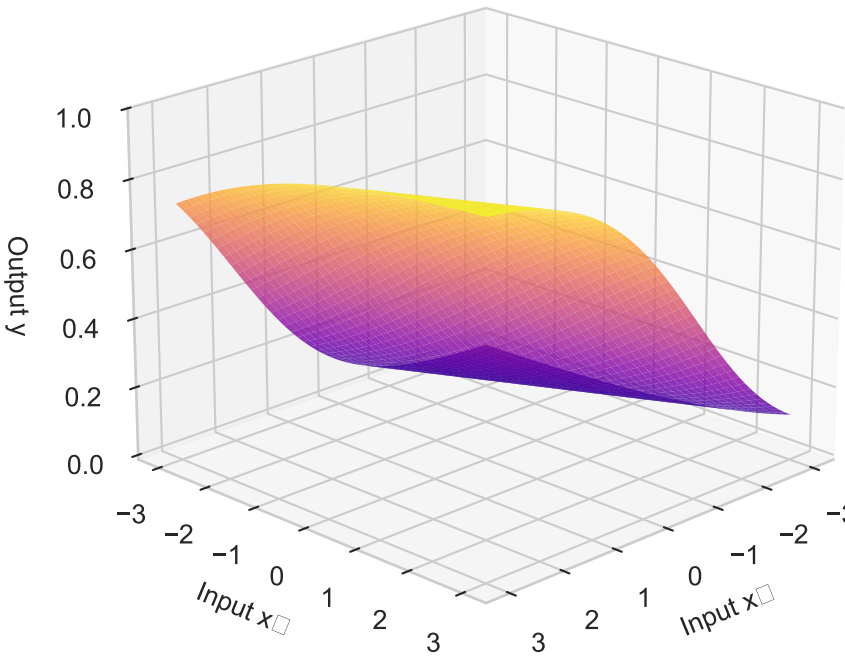# Single Neuron Visualization: Effect of Activation Functions
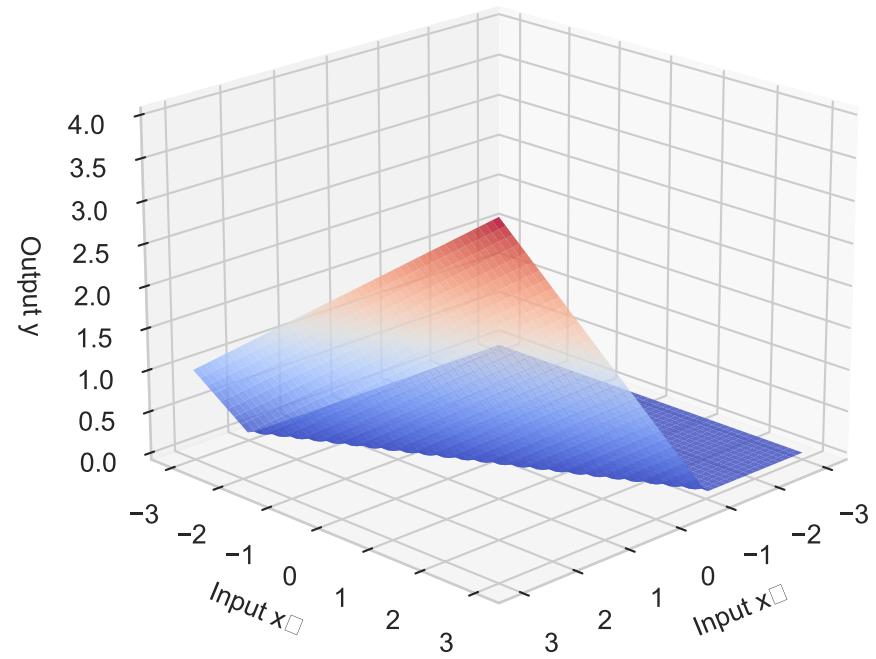
Linear (No Activation)
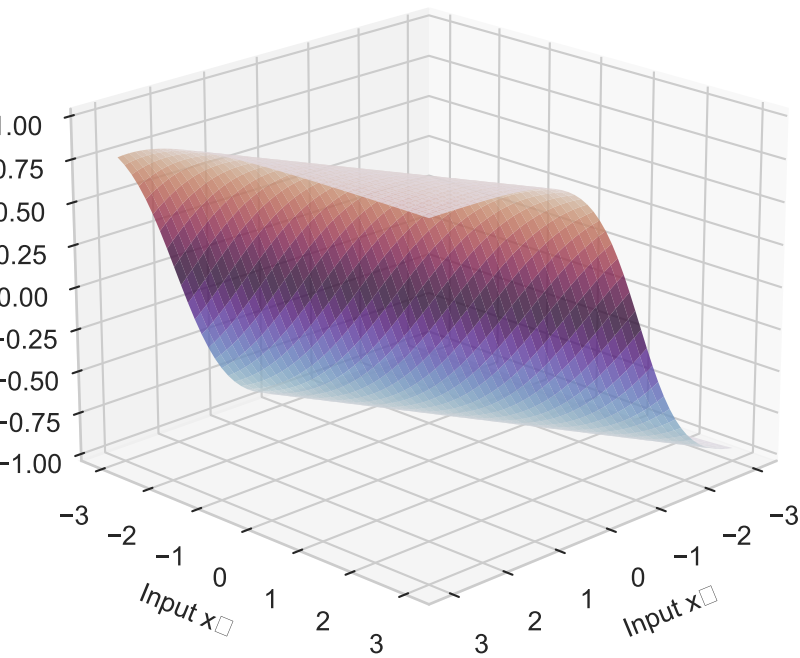$z = w_1 x_1 + w_2 x_2 + b$

Sigmoid Activation
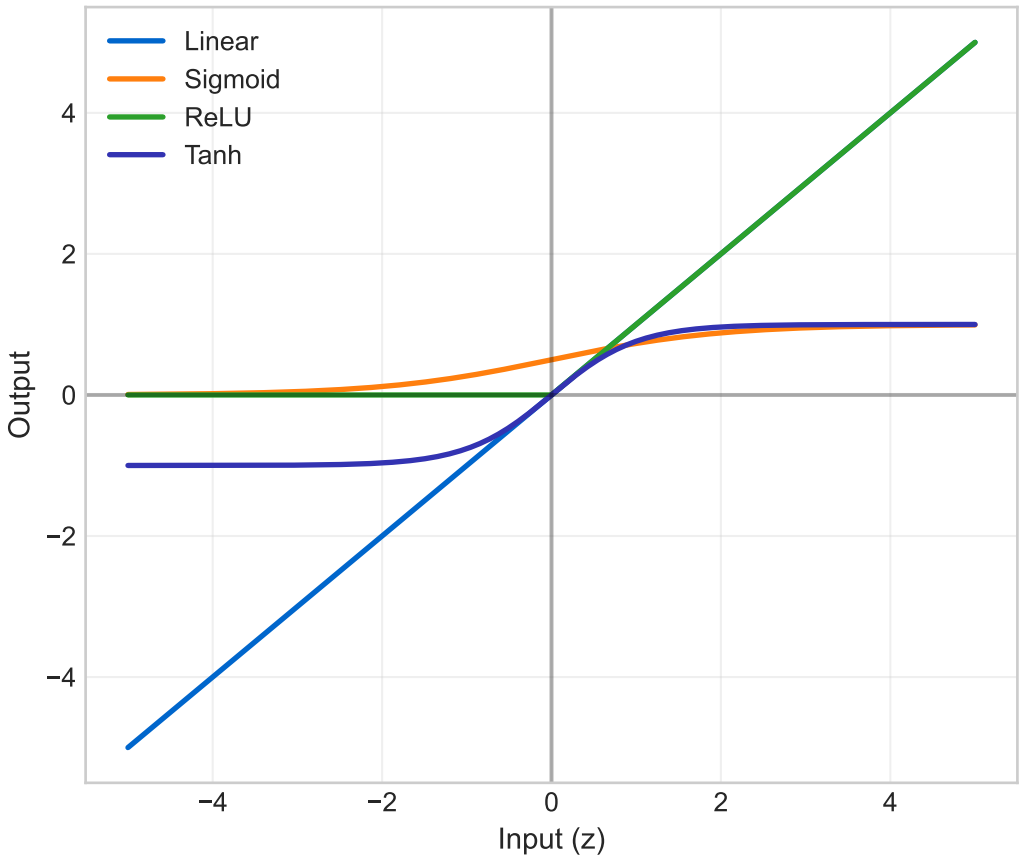$y = 1/(1 + e^{-z})$

ReLU Activation
$y = max(0, z)$

Tanh Activation
$y = tanh(z)$

Activation Functions Comparison

- Linear
- Sigmoid
- ReLU
- Tanh

Decision Boundaries in 2D

- Linear
- Sigmoid
- ReLU
- Tanh