# **Sigmoid Neuron**

## **Sigmoid Model**

### **Model Part 4**

How does the function behave if we change w and b

1. **w**: (controls the slope)
   1. Negative w, negative slope, mirrored s-shape, becomes more harsh(vertical/less smooth) the more negative it goes
   2. Positive w, positive slope, normal s-shape, becomes more harsh(vertical/less smooth) the more positive it goes
2. **b**: (controls the midpoint)
   1. y = 1/(1 + exp(-(wx + b)) = ½ (for w=1.00, b = -5)
   2. exp(-(wx + b)) = 1
   3. wx + b = 0
   4. x = -b/w (As b becomes more -ve, boundary moves more to the right +ve, and vice versa)