# PadhAI: 6 Jars of Sigmoid Neuron

One Fourth Labs

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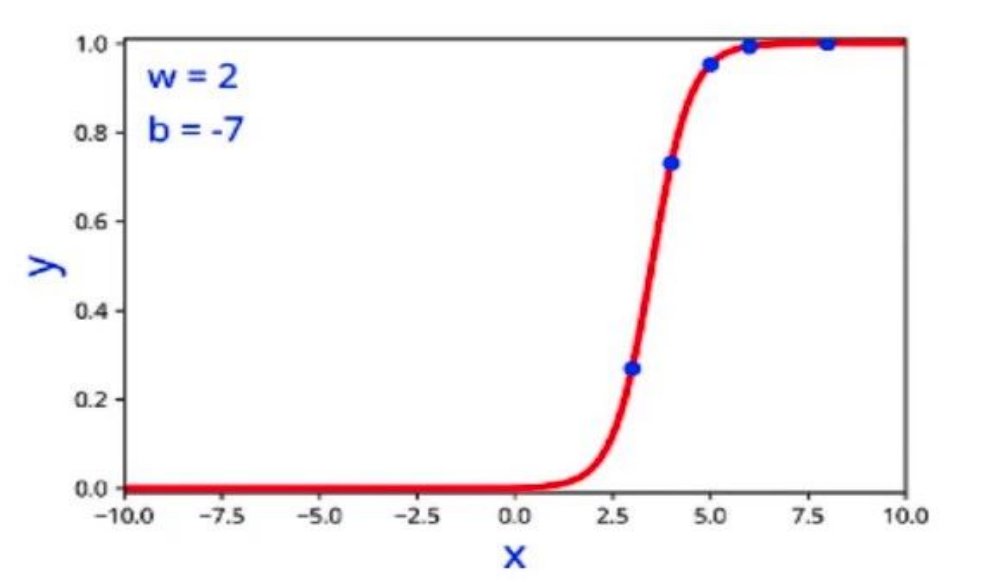
## Learning by guessing

Can we try to estimate w,b by using some guess work?

1. Steps:
   a. **Initialise:** w,b to 0
   b. **Iterate over Data:** guess_and_update($x_i$)
      i. $w = w + \Delta w$
      ii. $b = b + \Delta b$
      iii. Here, $\Delta w$ and $\Delta b$ are the amounts we change w and b, by pure guess-work. We need to design a function to replace the guess-work.
   **c. Till satisfied**
2. Consider the following dataset

| I/P | O/P |
|---|---|
| 2 | 0.047 |
| 3 | 0.268 |
| 4 | 0.73 |
| 5 | 0.952 |
| 8 | 0.999 |

3. Manually change the slope w and the midpoint b till it looks to fit the data, then perform fine-tuning to match the training examples as closely as possible




4. We have guessed, by trial and error and found that w=2 and b=-7 fits the training data best.
5. This is only possible in lower dimensions, 1D or 2D, and becomes much harder as more features are involved.