

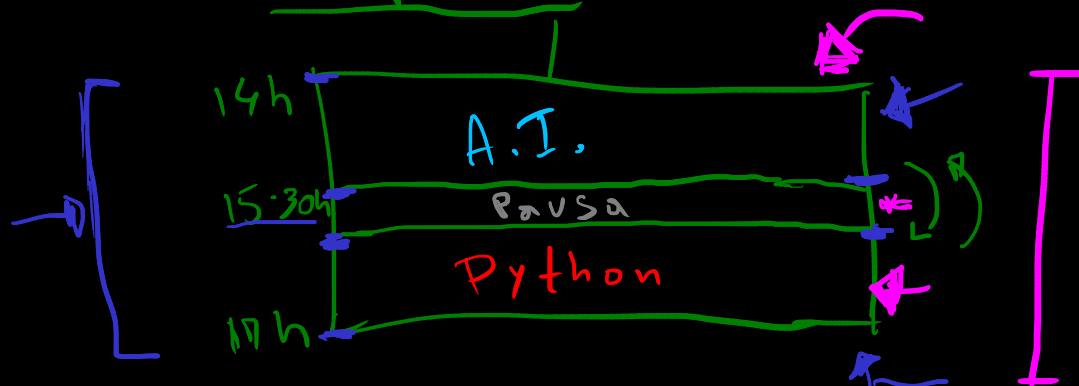
- IA & Arte

- ↳ Fabrizio Poltronieri

- ↳ Programação

- ↳ Utilização da IA como ferramenta do artista.

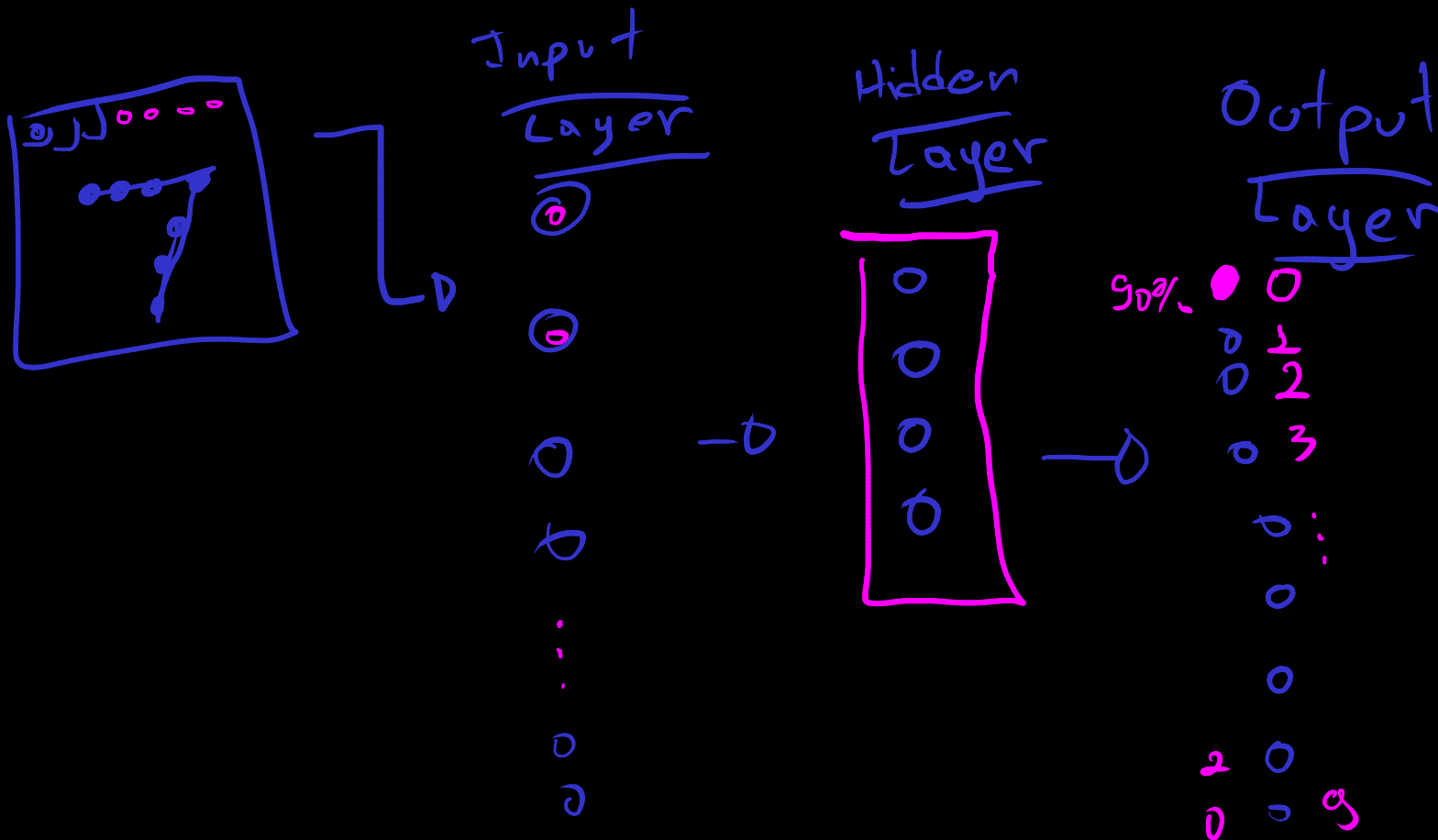
- Proposta:



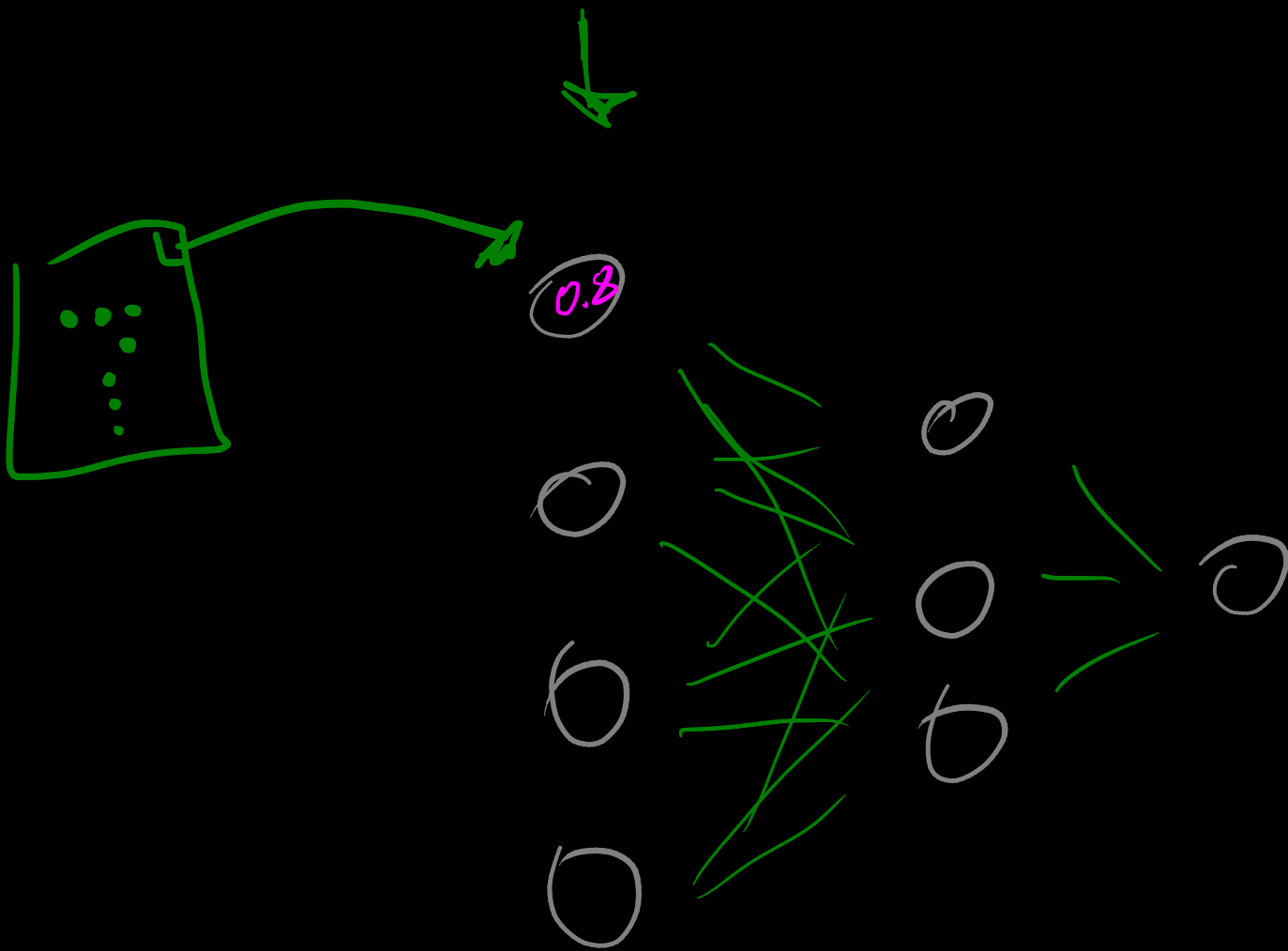
- Dialogos Experimentais #1.

Layers (Camadas):

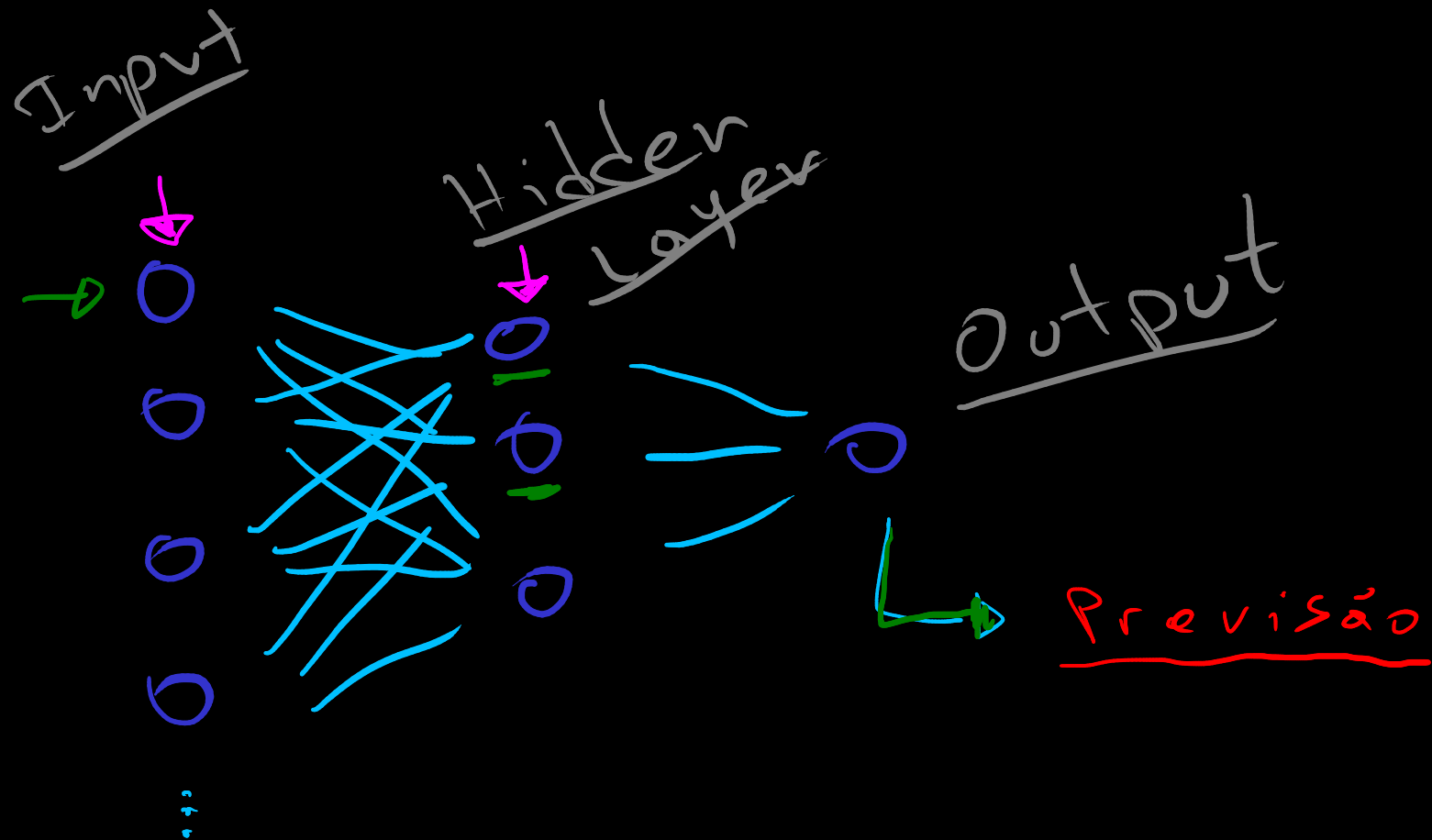
- Input Layer;
- Hidden Layer;
- Output Layer;



Neurônio e Ativação $\rightarrow 0 \sim 1$



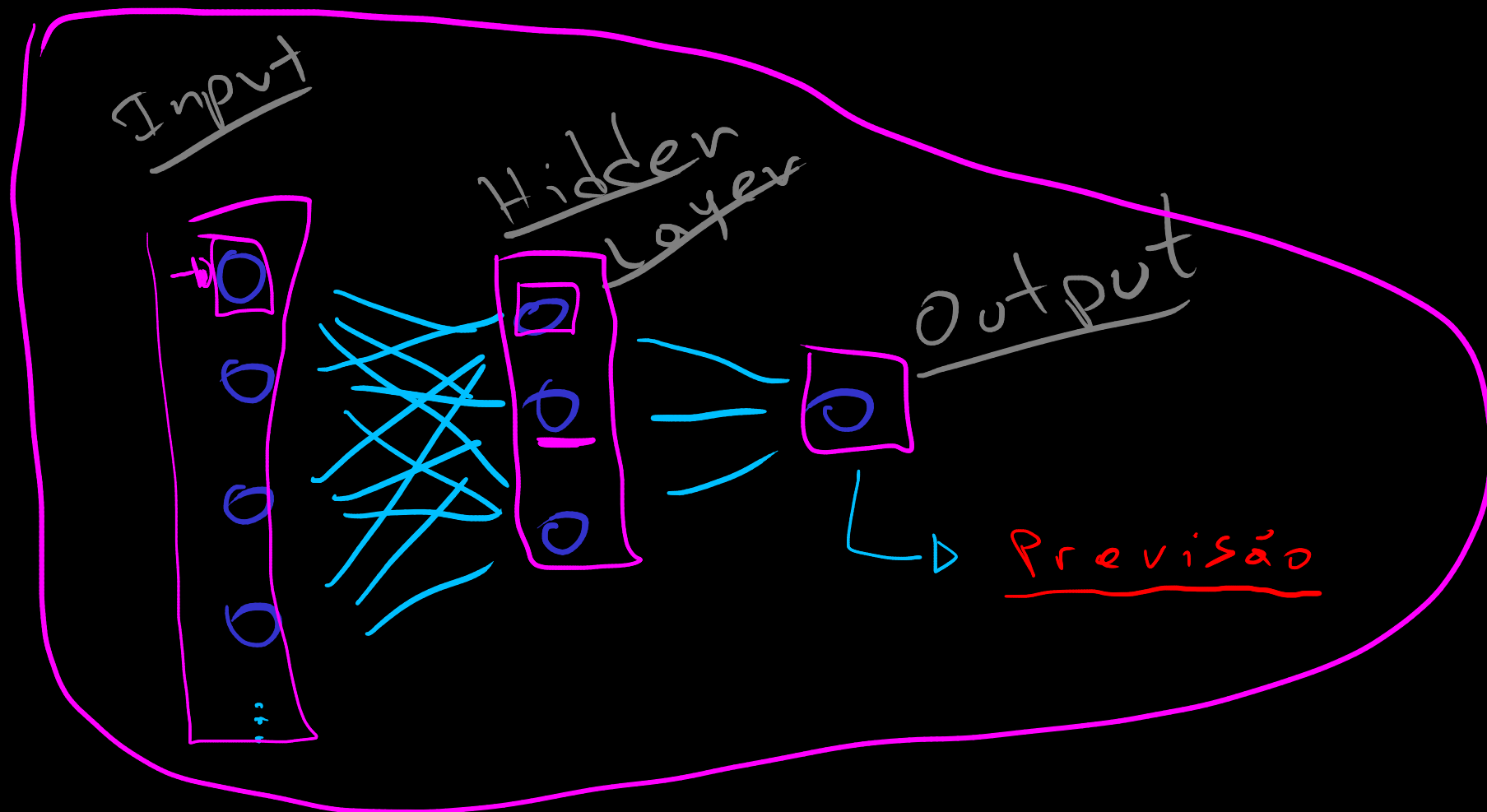
- O que as ativações representam?
- Como elas são definidas?

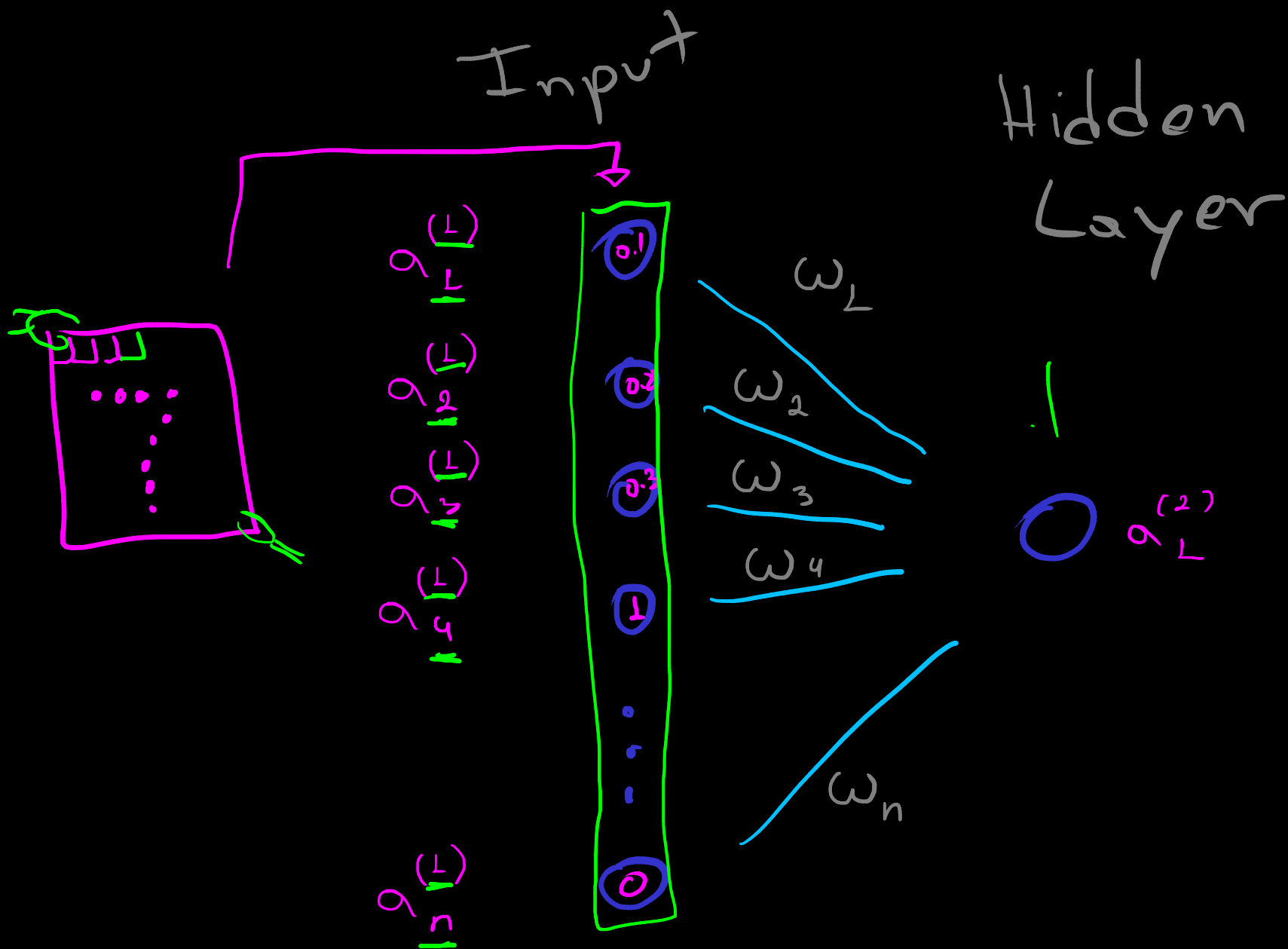


Parâmetros

- Pesos

- Biases

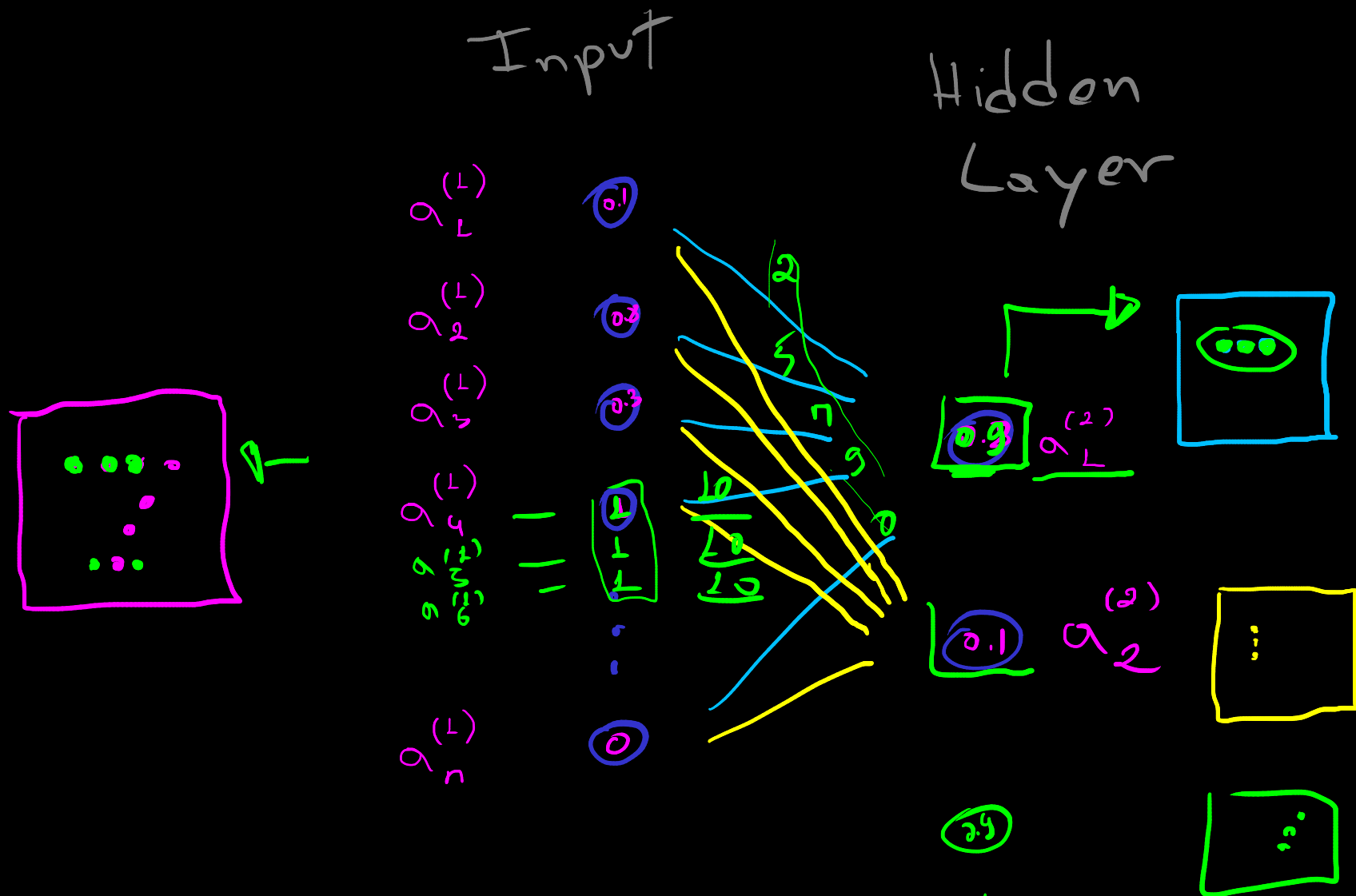




$$\left(\underline{a_1^{(1)}} \cdot w_1 + \underline{a_2^{(1)}} \cdot w_2 + \dots + \underline{a_n^{(1)}} \cdot w_n \right) = a_L^{(2)}$$

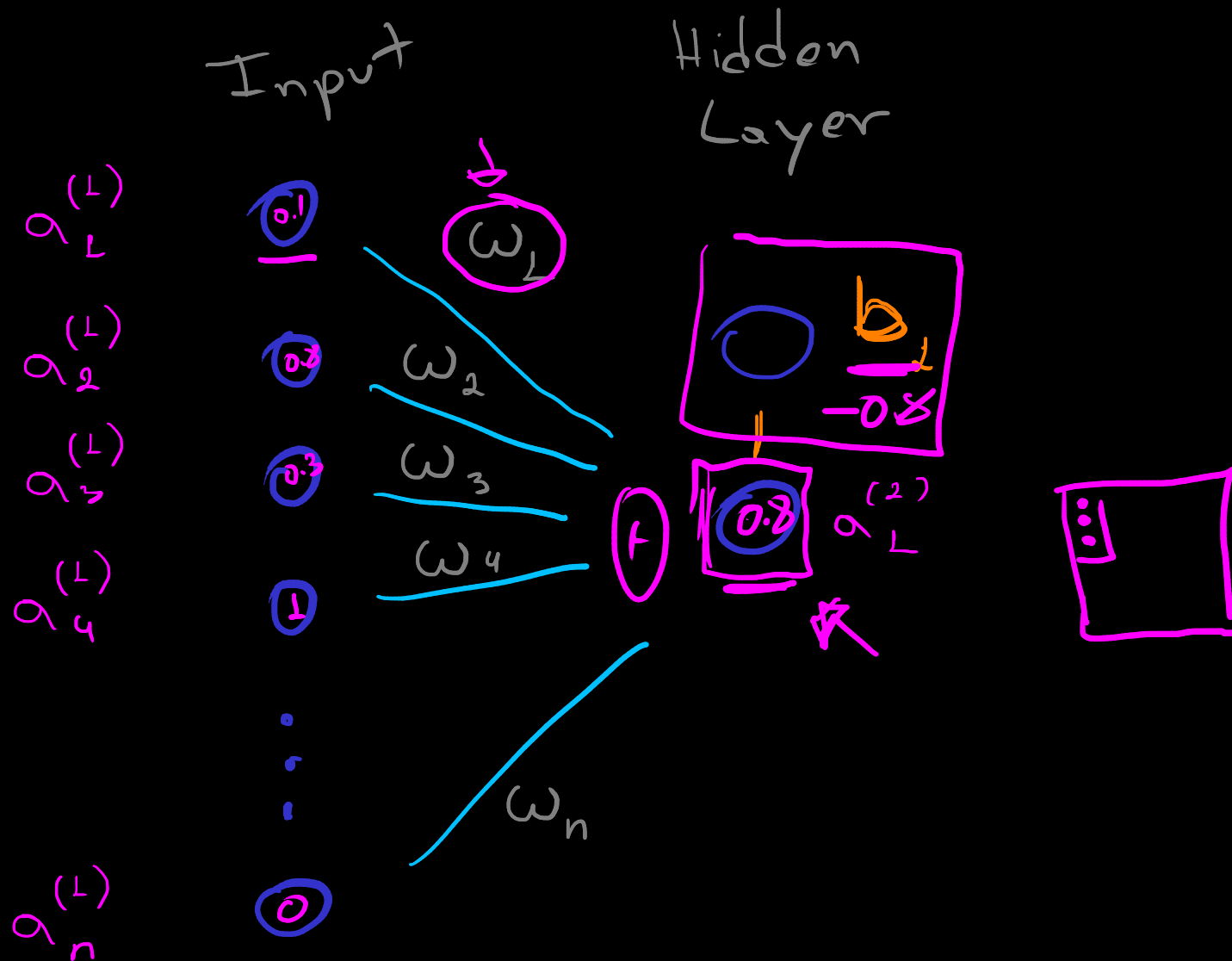
Pesos $\rightarrow$ Responsáveis pela definição das diferentes ativações

$\rightarrow$ Padrões



Bias

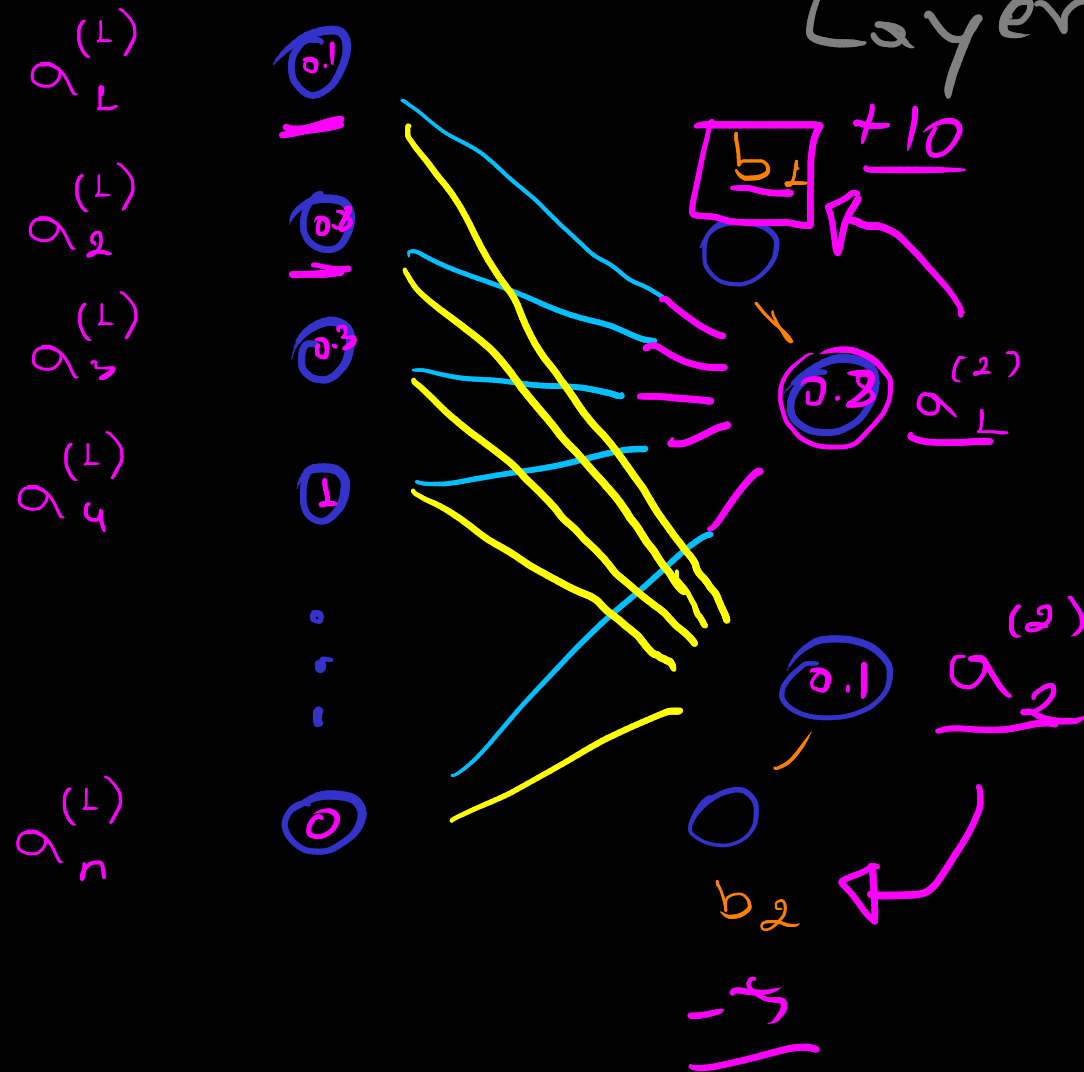
— Regula a importância do neurônio.

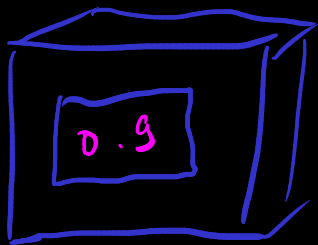


$$L_0 \left(\underbrace{a_1^{(1)} \cdot w_1}_{\text{red}} + \underbrace{a_2^{(1)} \cdot w_2}_{\text{red}} + \dots + \underbrace{a_n^{(1)} \cdot w_n}_{\text{red}} + \boxed{b_1}_{\text{red}} \right) = a_L^{(2)}$$

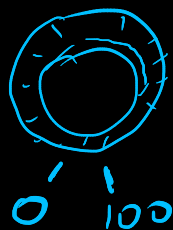
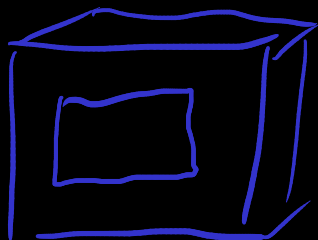
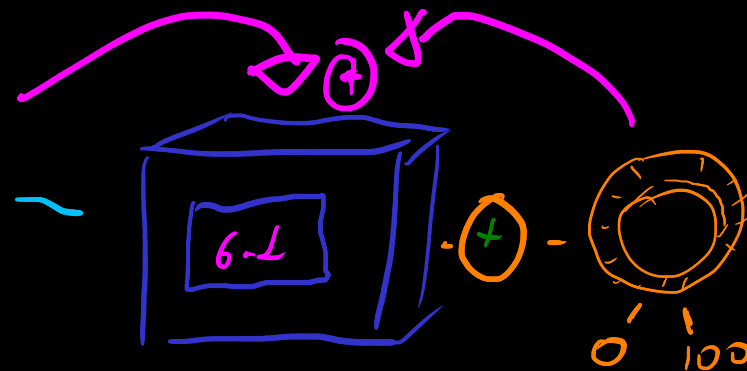
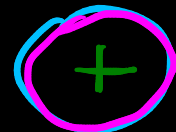
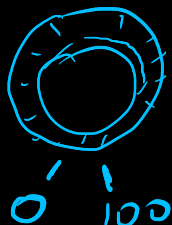
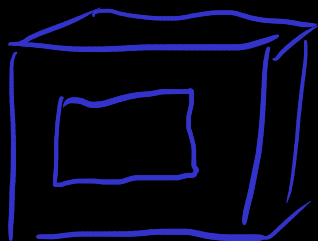
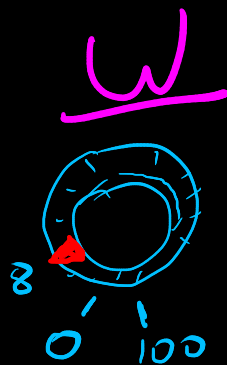
Input

Hidden
Layer





(0.9, 8)



Funções

$$f(x) = 2x$$

=>

$$y = 2x$$



$$a = 2$$

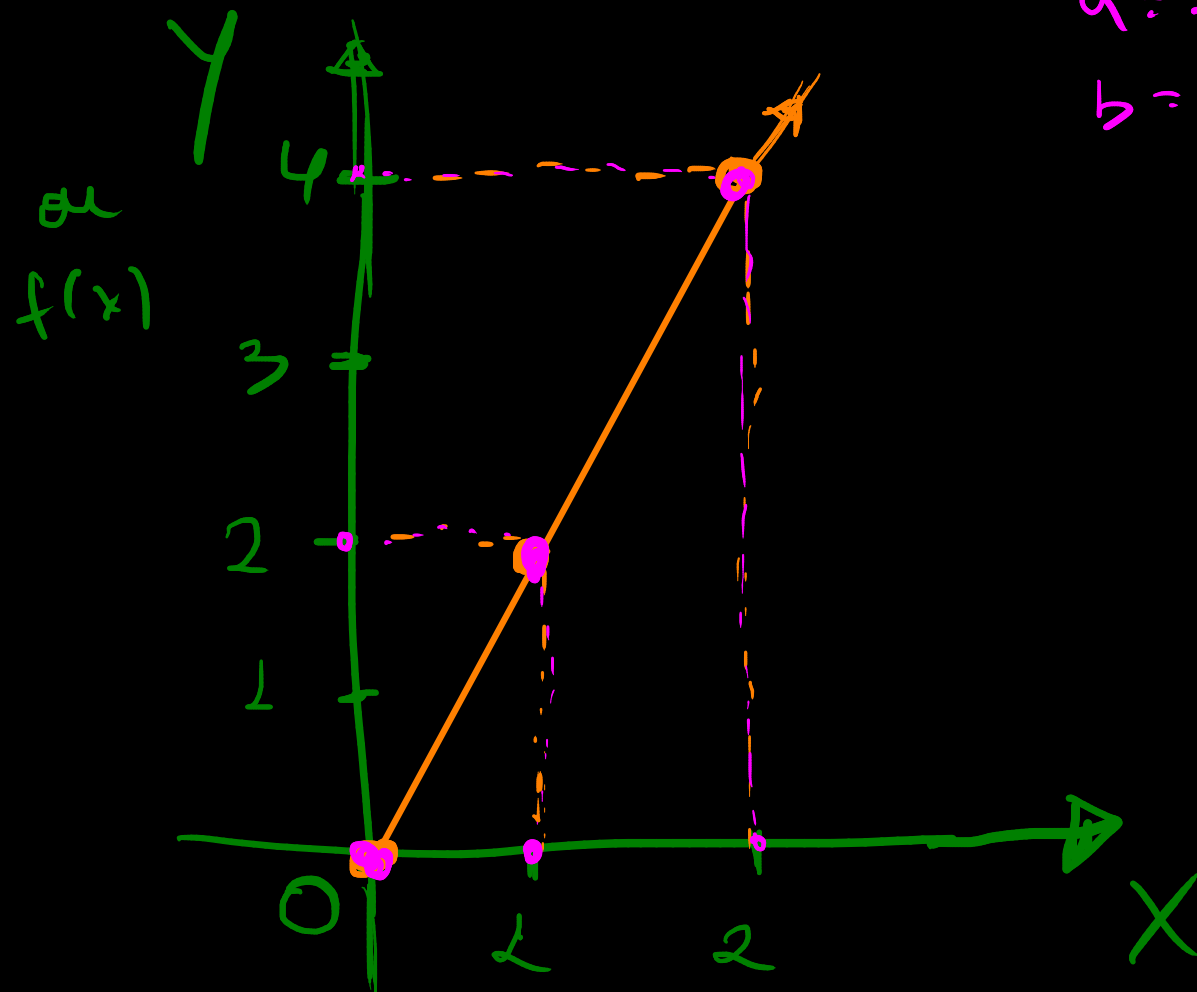
$$b = 0$$

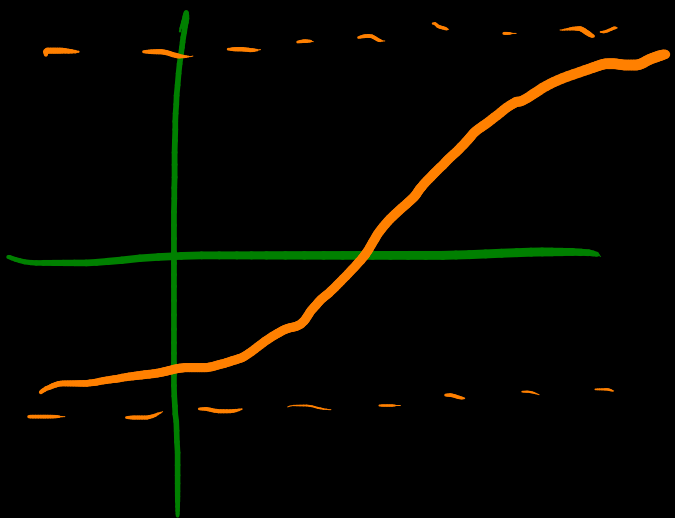
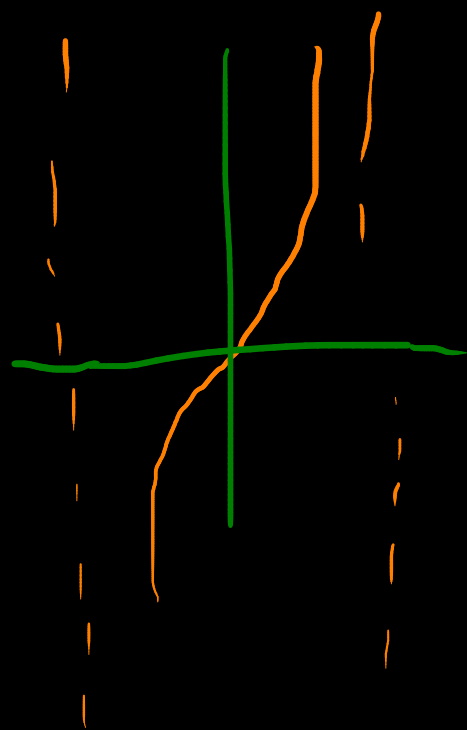
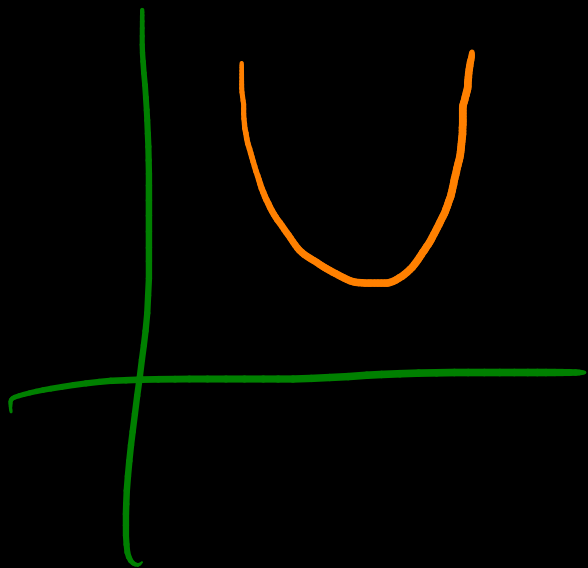
Função
Linear

$$f(x) = ax + b$$



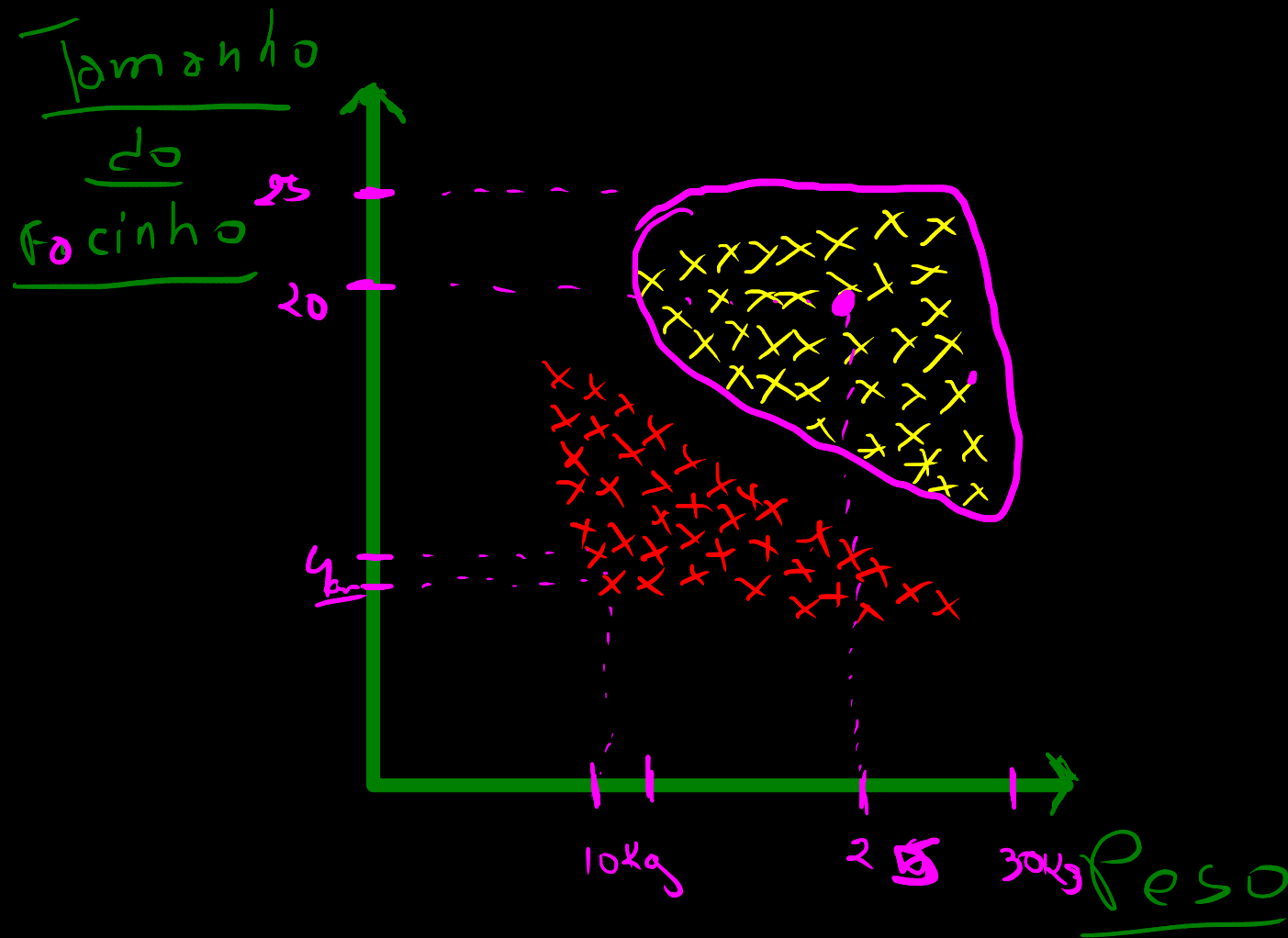
$$a \neq 0$$





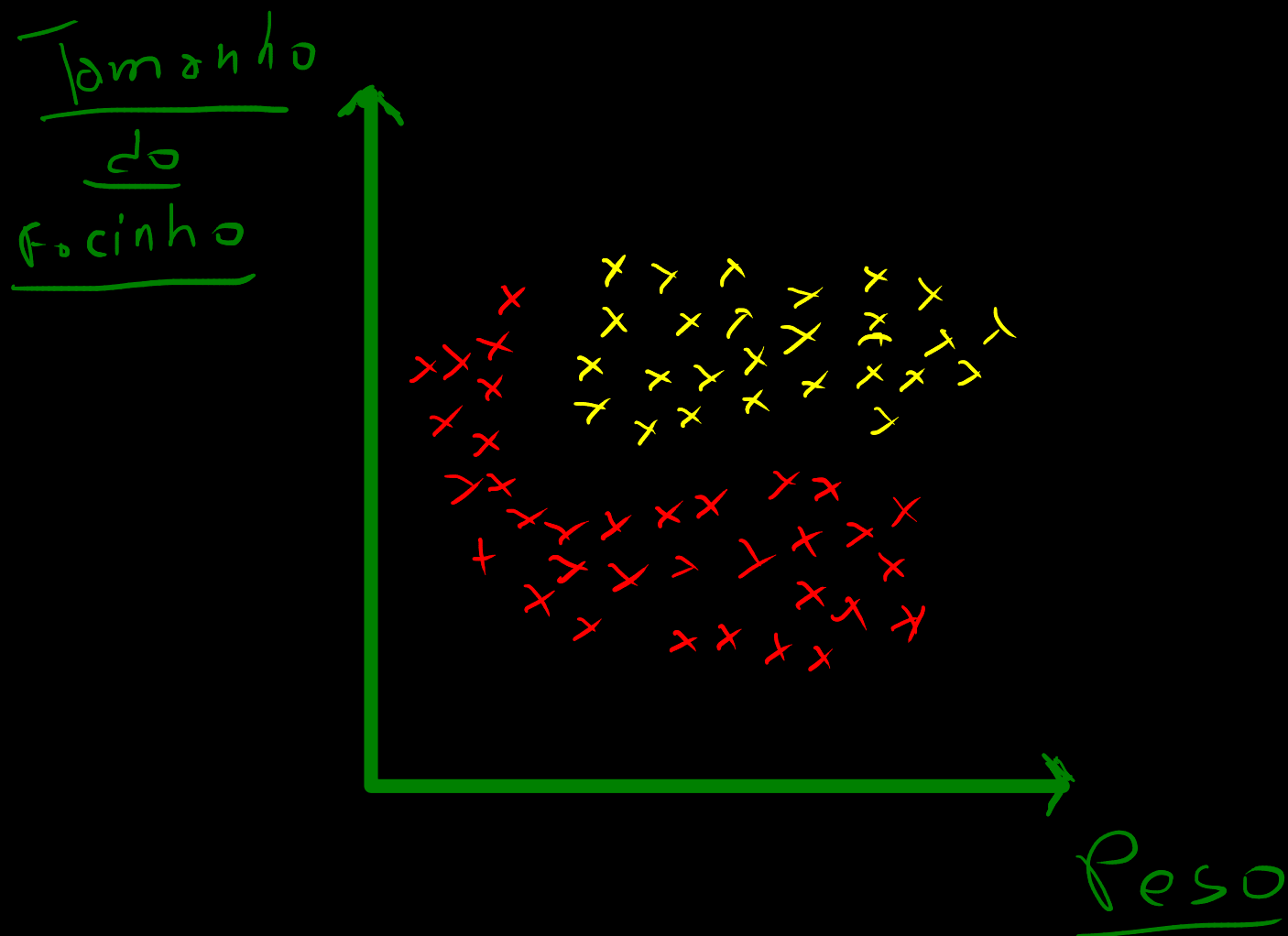
Funções não
Lineares

Gato ou Cachorro?



TF	P	Label
11		G
		C
20	25	

Gato LaPerm ou Pixie-bob?



Função não linear

• Sigmoid

$$\rightarrow \frac{1}{1 + e^{-x}}$$

• tanh

$$\rightarrow \frac{(e^x - e^{-x})}{(e^x + e^{-x})}$$

• ReLU

$$\rightarrow \max(0, x)$$

ou

$$\begin{cases} 0 & \text{para } x \leq 0 \\ x & \text{para } x > 0 \end{cases}$$

