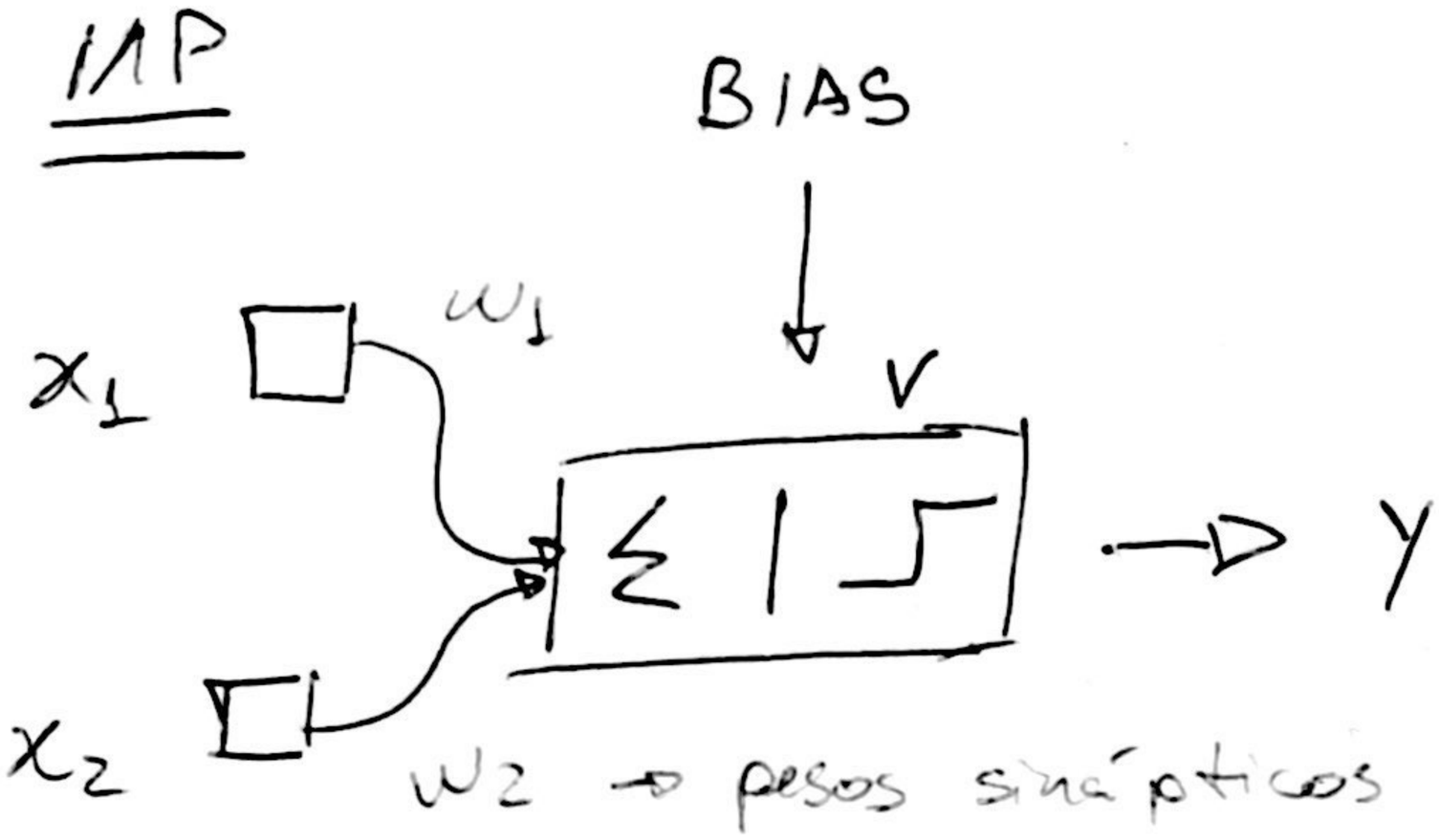
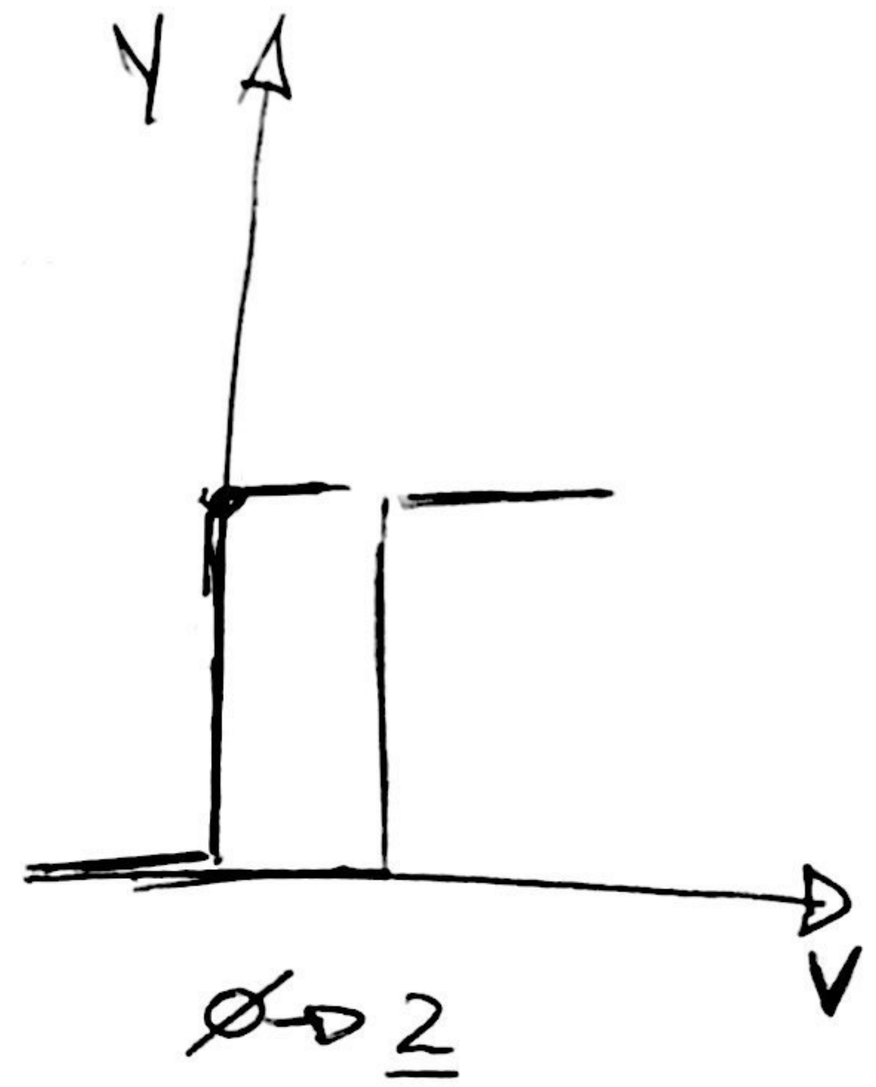
Perceptron de Camada Única

MP



x_1	x_2	d	v	y
0	0	0	0	0
0	1	0	1	0
1	0	0	1	0
1	1	1	1	1



O problema da Sinapse adaptativa

- Técnicas de otimização Irrestrita

x_1	x_2	BIAS	w_1	w_2	w_B	d	V	y	e	Δw_1	Δw_2	Δw_B
0	0	1	0	0	1	0	1	1	-1	0	0	-0,1
0	1	1	0	0	0,9	0						
1	0	1				0						
1	1	1				1						

$t=1$

$$V(t) = x_1(t) \cdot w_1(t) + x_2(t) \cdot w_2(t) + BIAS \cdot w_{BIAS}(t)$$

$V(1) = 0 + BIAS \cdot w_B(t) = 1$

$y(1) = 1 \quad / \quad e(t) = d(t) - y(t) = -1$

$\Delta w_1(1) = \eta \cdot x_1(t) \cdot e(t) = 0$

$\Delta w_2(t) = 0$

$w_2(t+1) = 0$

$\Delta w_{BIAS} = 0,1 \cdot 1 \cdot -1 = -0,1$

$w_{BIAS}(t+1) = 1 - 0,1 = 0,9$

2

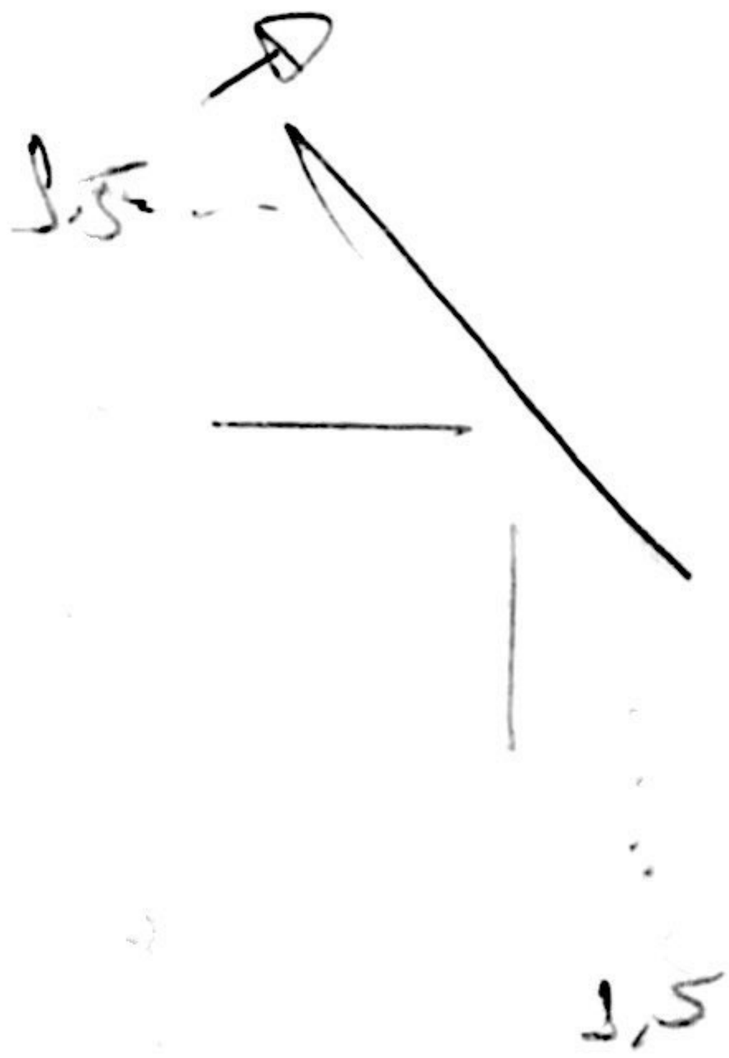
$$y = -a x + b$$

$$y = x_1 \cdot w_1 + x_2 \cdot w_2 + \text{Bias} \cdot w_{\text{Bias}}$$

$$x_1 \cdot 0,2 + x_2 \cdot 0,1 - 0,3 = 0$$

$$x_1 = \frac{0,3}{0,2} = 1,5$$

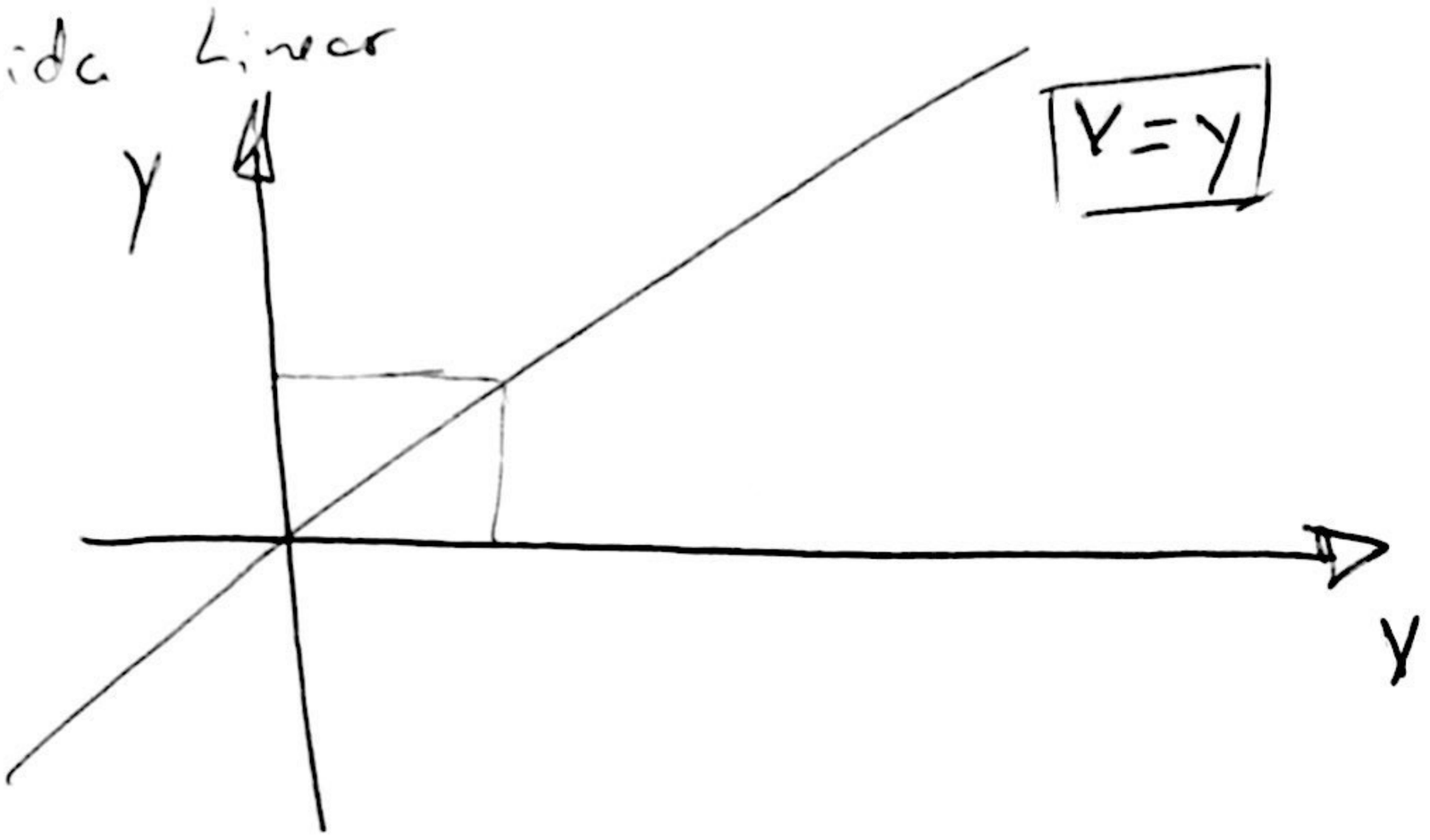
$$x_2 = \frac{0,3}{0,1} = 3,0$$



Perceptron com saída Contínua

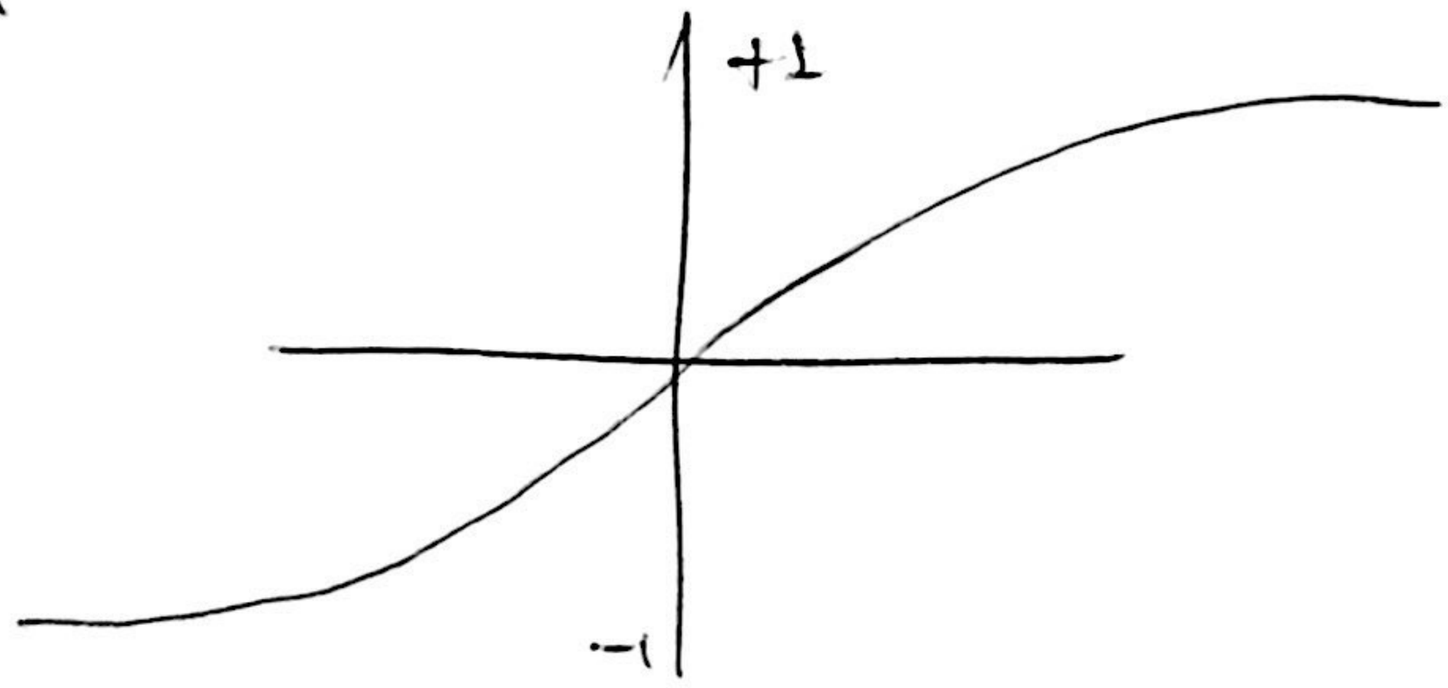
Devemos adaptar: função de transferência

Saída Linear



função tangente - hiperbólica

função sigmóide



Erro Quadrático médio

$$E = \sqrt{1/2 \cdot (d - y)^2}$$

No caso do erro máximo

$$E_{max}$$