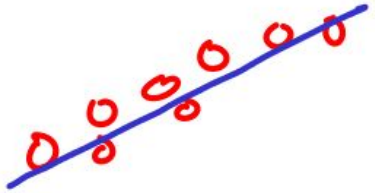
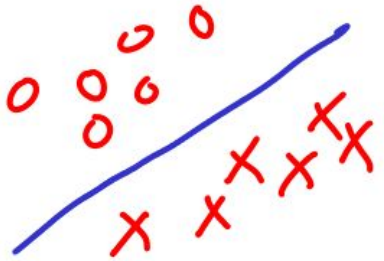
# Repaso

**Métodos lineales**

- Regresión lineal



- Regresión logística (clasificación)



**Paramétricos** → $y = f(\mathbf{x}, \Theta)$ → $L(y, t)$ función de coste (minimizar)

# Repaso

**Descenso por gradiente**

$$\vec{\theta}_t = \vec{\theta}_{t-1} - \eta \cdot \vec{\nabla}_\theta L$$

Regresión lineal

$$y_i = \vec{w}^t \cdot \vec{x}_i + b$$

$$L = \frac{1}{2} \sum_{i=1}^{N} (y_i - t_i)^2$$

MSE

Regresión logística

$$z_i = \vec{w}^t \cdot \vec{x}_i + b$$

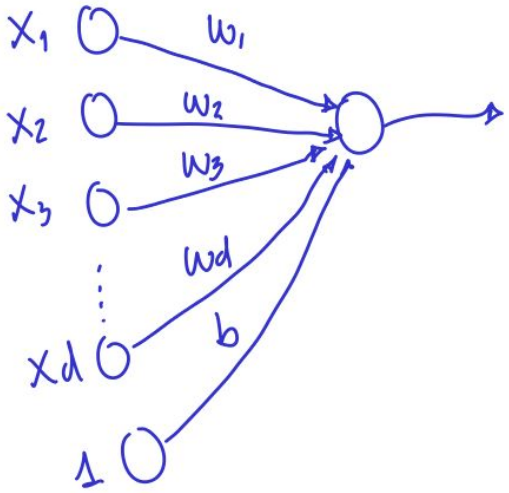
$$y_i = \sigma(z_i)$$

$$L = -\sum_{i=1}^{N} \left( t_i \log y_i + (1 - t_i) \log (1 - y_i) \right)$$

CROSS-ENTROPY

# Repaso

## Interpretación neuronal




$$y = f(w_1 x_1 + w_2 x_2 + \cdots + w_d x_d + b) = f(\vec{w}^t \cdot \vec{x} + b)$$

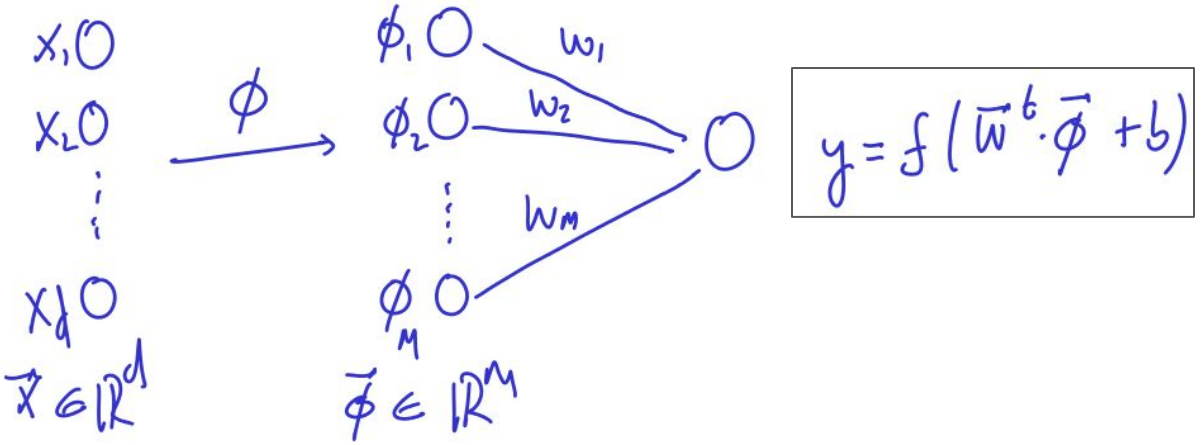
**Función de activación:**

$f(\boldsymbol{x}) = \boldsymbol{x}$ ⟶ *regresión lineal*

$f(\boldsymbol{x}) = \sigma(\boldsymbol{x})$ ⟶ *regresión logística*

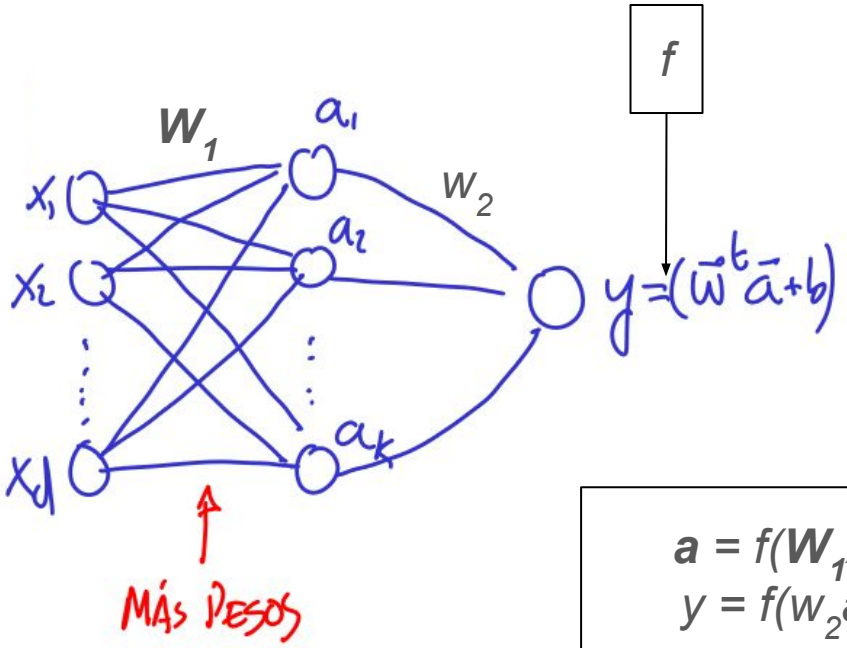
# Repaso

## Problemas no lineales (kernels)



# Repaso

**Problemas no lineales (red neuronal)**




$$\boldsymbol{a} = f(\boldsymbol{W}_1\boldsymbol{x} + \boldsymbol{b}_1)$$
$$y = f(w_2\boldsymbol{a} + b_2)$$