Sea $\sigma(x) = 1 / 1 + \exp(-x)$ Comprobar que $d/dx\ \sigma(x) = \sigma(x) *(1 – \sigma(x))$.

$d/dx\ \sigma(x) = d/dx\ 1 / 1 + \exp(-x) = d/dx\ (1 + \exp(-x))^{(-1)} = -[1 + \exp(-x)]^{(-2)} * [-\exp(-x)]$

$= \exp(-x) / 1 + \exp(-x)^{(-2)} = 1 / 1 + \exp(-x) * \exp(-x) / 1 + \exp(-x)$

$= 1 / 1 + \exp(-x) * [(1 + \exp(-x) / 1 + \exp(-x)) – (1 / 1 + \exp(-x))]$

$= 1 / 1 + \exp(-x) * [1 - 1 / 1 + \exp(-x)]$

Reescribiendo

$= \sigma(x) * (1 - \sigma(x))$