$$\int_{-\infty}^{\ln 2} \frac{1}{e^x + 4e^{-x}} dx = \int_{-\infty}^{\ln 2} \frac{e^x}{e^{2x} + 4} dx$$

Usando CV: $u = e^x \quad \rightarrow \qquad du = e^x dx$ y los límites son:

$x \rightarrow -\infty, \quad u = 0$ y $x = \ln 2\,, \quad u = e^{\ln 2} = 2$

Y la integral queda

$$\int_0^2 \frac{1}{u^2 + 4} du = \frac{1}{4} \int_0^2 \frac{1}{\frac{u^2}{4} + 1} = \frac{1}{4} (2 \arctan\left(\frac{2}{2}\right) - 2 \arctan\left(\frac{0}{2}\right))$$

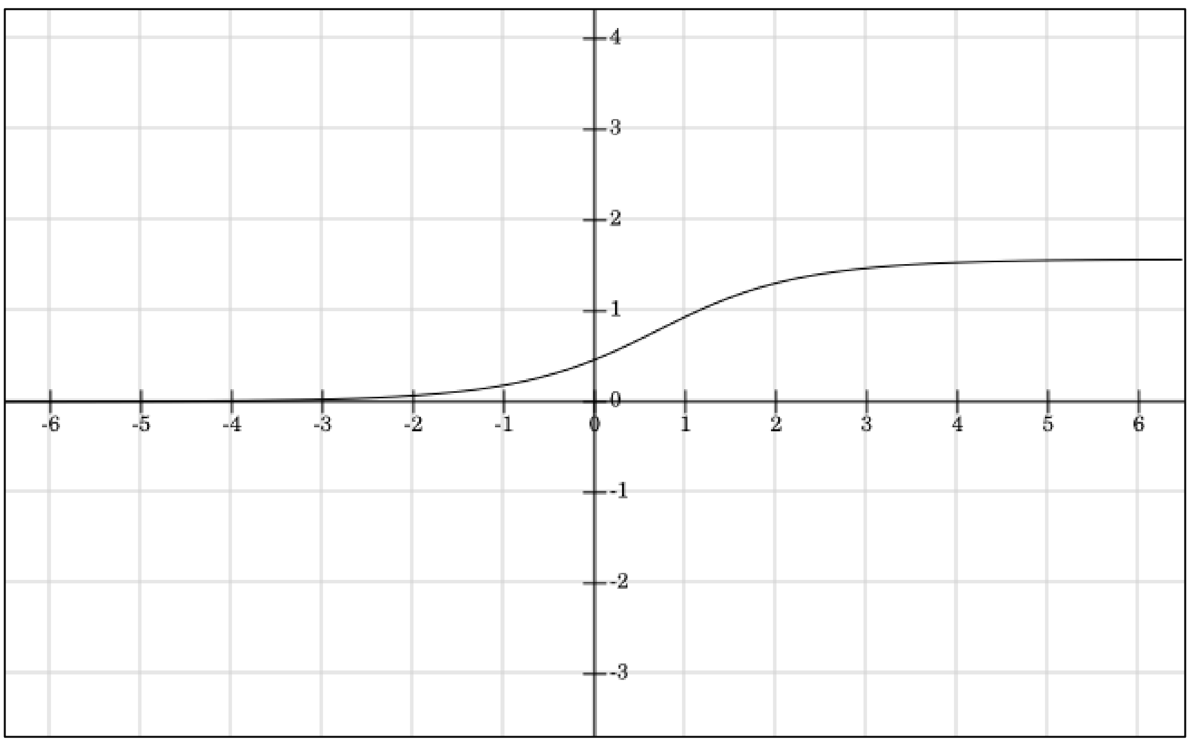

Gráfico 1: arctg(e^(x)/2)