TRABALHO 1 - CÁLCULO II

$$\int \frac{e^x}{(e^x)^2 + 4} \, dx = \int \frac{du}{u^2 + 4} \overset{\div 4}{\underset{\div 4}{}} = \int \frac{\frac{1}{4} du}{\frac{u^2}{4} + 1} =$$

$$u = e^x$$
$$du = e^x \, dx$$

$$= \int \frac{\frac{1}{4} du}{\left(\frac{u}{2}\right)^2 + 1} = \frac{1}{2} \int \frac{\frac{1}{2} du}{\left(\frac{u}{2}\right)^2 + 1} = \frac{1}{2} \int \frac{dv}{v^2 + 1} =$$

$$v = \frac{u}{2}$$

$$dv = \frac{1}{2} du$$

$$= \frac{1}{2} \operatorname{arctg} v + C = \frac{1}{2} \operatorname{arctg}\left(\frac{u}{2}\right) + C =$$

$$= \frac{1}{2} \operatorname{arctg}\left(\frac{e^x}{2}\right) + C$$