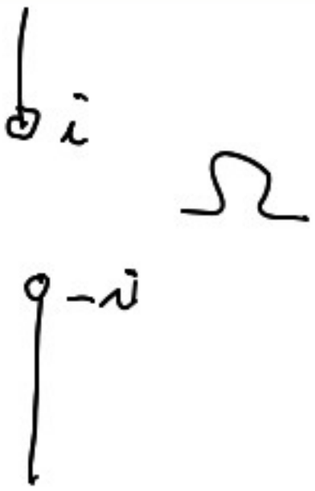
$\int_\sigma \frac{dz}{1+z^2}$

arctan es holomorfa en

$\Omega = \mathbb{C} \setminus \{ix;\ y \in \mathbb{R} \text{ con } |y| \geq 1\}$



¿ $\sigma^* \subset \Omega$?

$\sigma(t) = \cos t + \frac{i}{2} \operatorname{sen} t$

$|\operatorname{Im} \sigma(t)| \leq \frac{1}{2} \Rightarrow \sigma(t) \in \Omega \quad \forall\, t \in [-\pi, \pi]$

$\Rightarrow \sigma^* \subset \Omega$

$\in \mathcal{H}(\Omega)$

Con $\arctan'(t) = \frac{1}{1+z^2}$

} R.B. $\Rightarrow \int_\sigma \frac{dz}{1+z^2} = 0.$