$$\operatorname{Arg} z = \begin{cases} \operatorname{arctg} \frac{y}{x} & \text{se } x > 0 \\ \pi + \operatorname{arctg} \frac{y}{x} & x < 0 \wedge y \geq 0 \\ -\pi + \operatorname{arctg} \frac{y}{x} & x < 0 \wedge y < 0 \\ \frac{\pi}{2} & x = 0 \wedge y > 0 \\ -\frac{\pi}{2} & x = 0 \wedge y < 0 \end{cases}$$

$[-\pi, \pi)$

$z = x + iy$

$$(\cosh x)' = \operatorname{senh} x$$

$$(\operatorname{senh} x)' = \cosh x$$

$$y(x) = \sum_{n=0}^{\infty} a_n x^n$$

$$y'(x) = \sum_{n=1}^{\infty} n a_n x^{n-1} = \sum_{n=0}^{\infty} (n+1) a_{n+1} x^n$$

$$y''(x) = \sum_{n=2}^{\infty} n(n-1) a_n x^{n-2} = \sum_{n=0}^{\infty} (n+1)(n+2) a_{n+2} x^n$$

INTEGRALI IMPROPRI

- $\int_a^{+\infty} \frac{1}{x^\alpha} dx$ $\begin{cases} \text{CONVERGE} & \text{per } \alpha > 1 \\ \text{DIVERGE} & \text{per } 0 < \alpha \leq 1 \end{cases}$ $\quad \alpha > 0$

- $\int_a^b \frac{1}{(x-a)^\alpha} dx$ $\begin{cases} \text{CONVERGE} & \text{per } 0 < \alpha < 1 \\ \text{DIVERGE} & \text{per } \alpha \geq 1 \end{cases}$

$\int_0^a \frac{1}{x^\alpha}$ $\begin{cases} \text{CONVERGE} & \alpha < 1 \\ \text{DIVERGE} & \alpha \geq 1 \end{cases}$