$$f(t) = 1 + i \cdot t$$

1) $\forall t \in \mathbb{R}^+$

2) $f(0) = 1 + i \cdot 0 = 1$

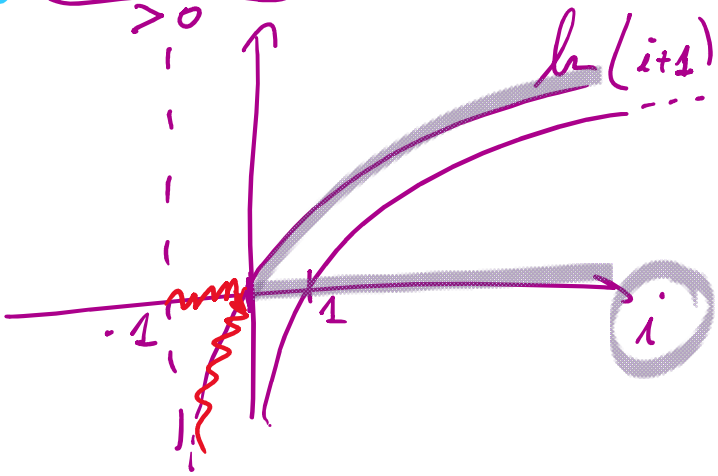
3) $f'(t) = i \geq 0$

$$f(t) = (1+i)^t$$

1) $\forall t \in \mathbb{R}^+$, $1 + i > 0$ $\quad \boxed{i > -1}$

2) $f(0) = (1+i)^0 = 1$

3) $f'(t) = \underbrace{(1+i)^t}_{>0} \cdot \underbrace{\ln(1+i)}_{>0}$, $i > 0$



$$f(t) = \frac{1}{1-i \cdot t} = (1 - i \cdot t)^{-1}$$

1) $1 - i \cdot t \neq 0 \qquad t \neq \frac{1}{i}$

2) $f(c) = \frac{1}{1 - i \cdot 0} = 1$

3) $f'(t) = -1 \cdot (1 - i \cdot t)^{-2} \cdot (-i) = \frac{i}{(1-it)^2}$ $\quad i > 0,\ i > 0$; $(1-it)^2 > 0$

$$(1 + i \cdot 1) = \frac{1}{1 - d \cdot 1} \qquad t = 1$$

$$\vdots$$

$$d = 1 - \frac{1}{1+i}$$

$$1 + i \cdot 1 = e^{\delta \cdot 1} \qquad t = 1$$

$$\delta = \ln(1+i)$$