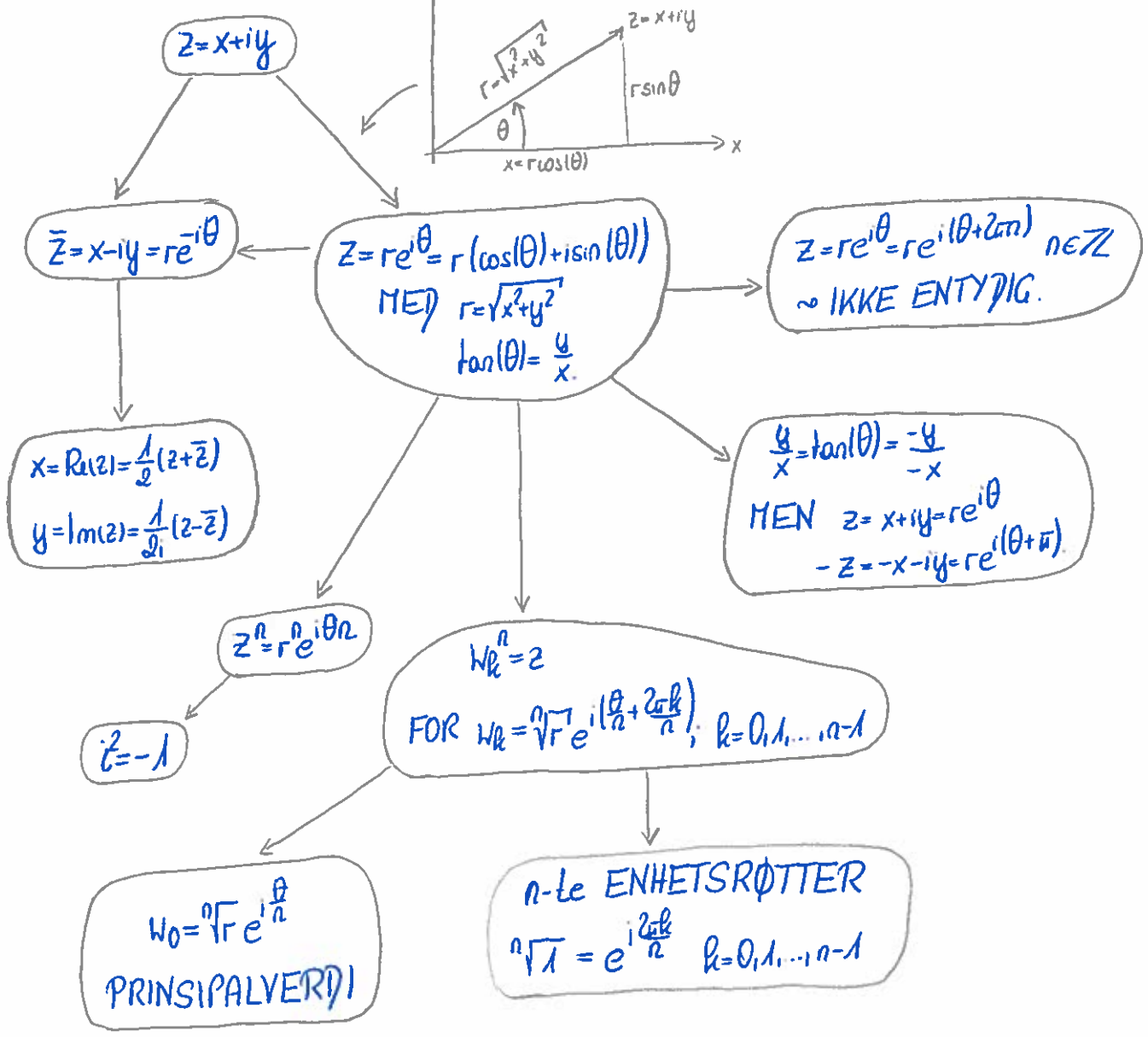
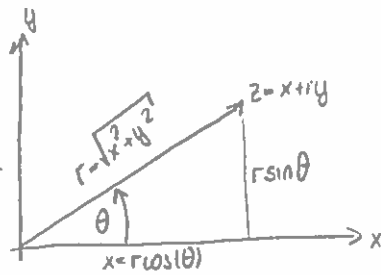
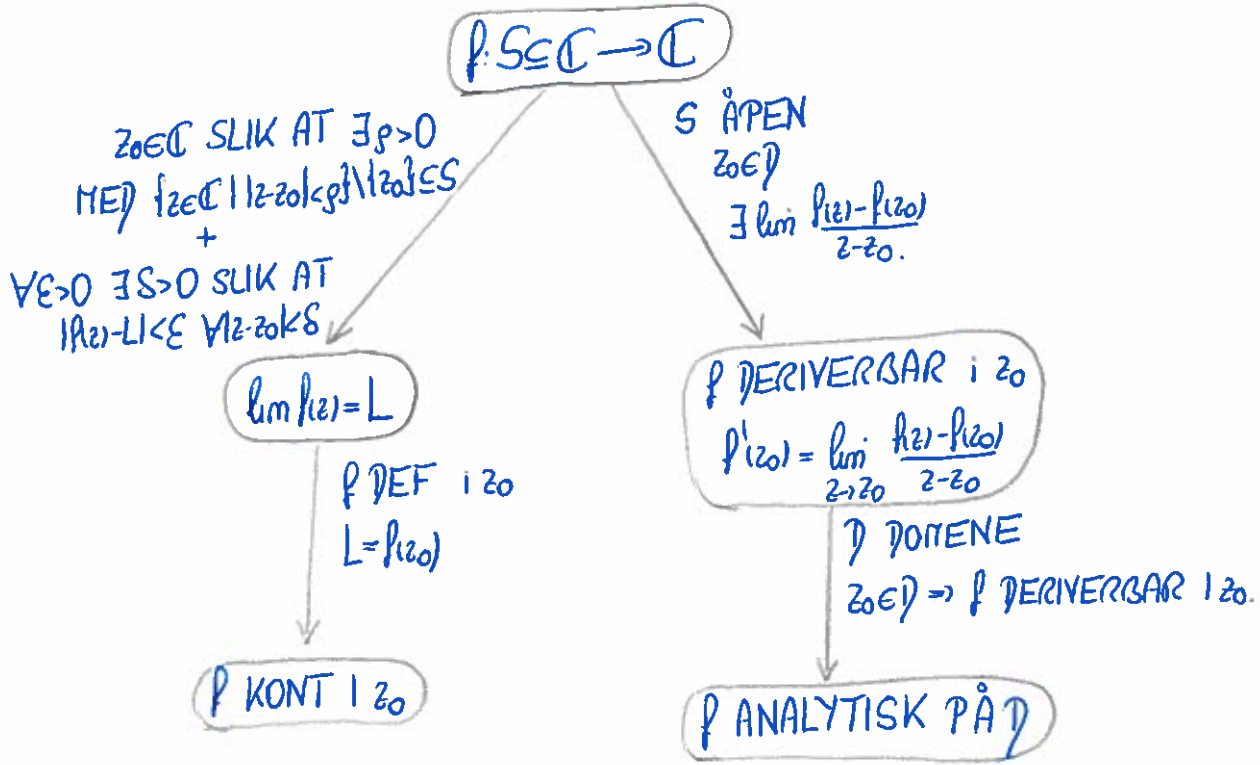
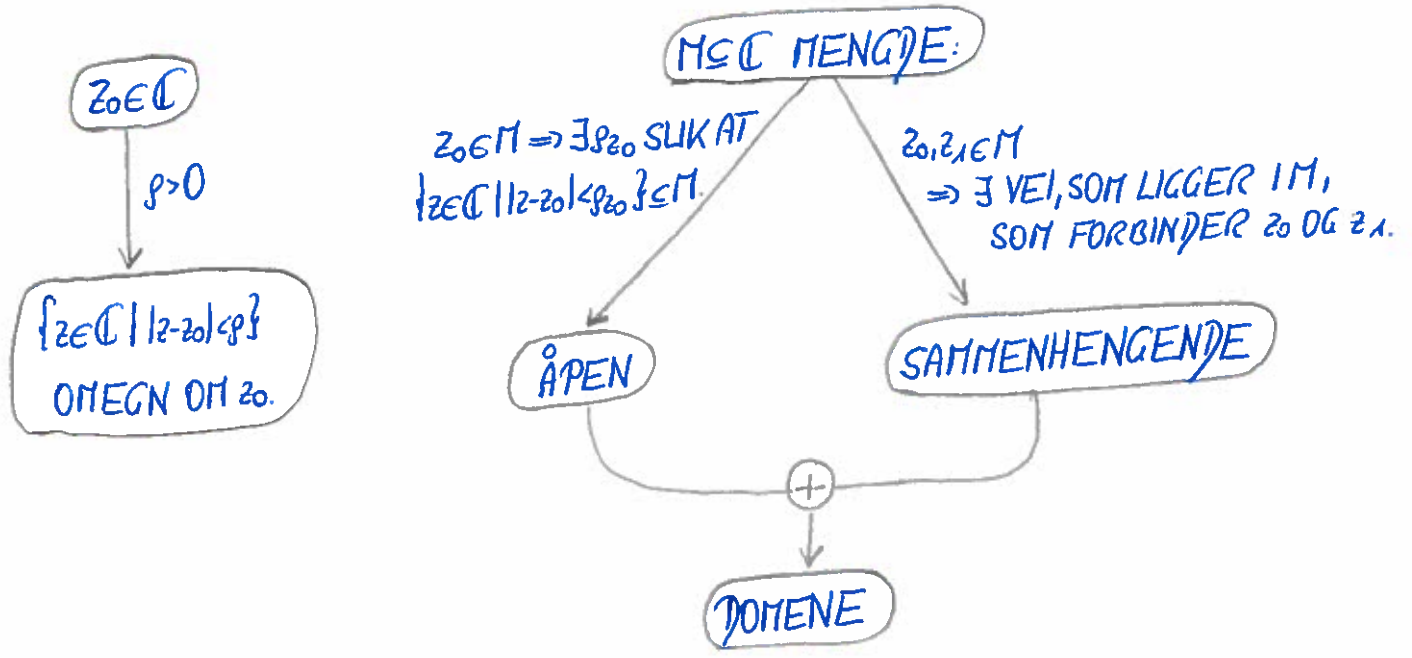


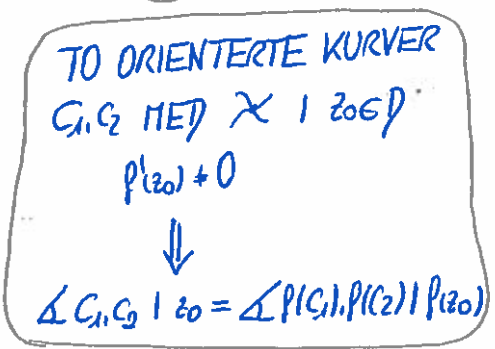
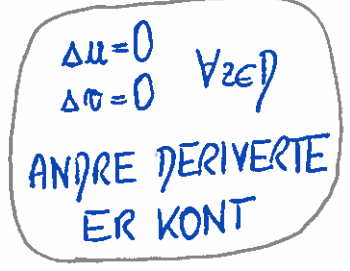
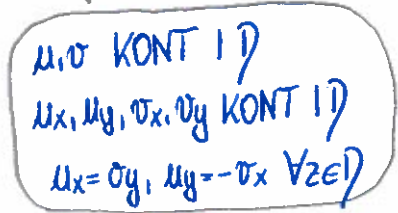
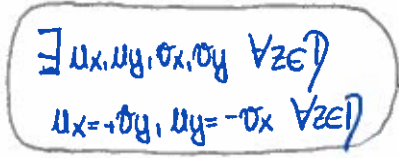
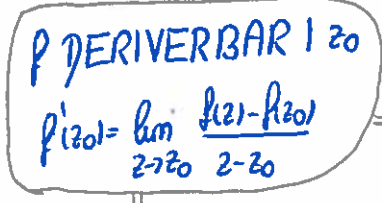
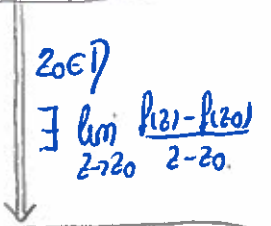
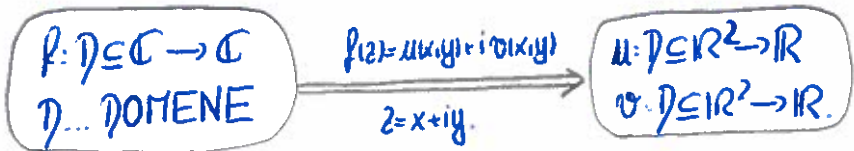
$$\mathbb{C} = \{z = x+iy \mid x, y \in \mathbb{R}\} = \{z = re^{i\theta} \mid r \geq 0, \theta \in \mathbb{R}\}.$$

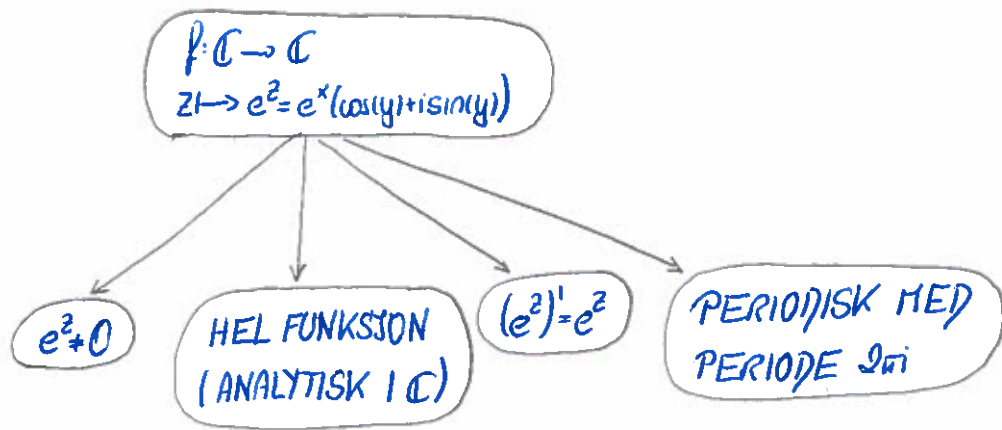


$$\Rightarrow f: \mathbb{C} \rightarrow \mathbb{C}$$

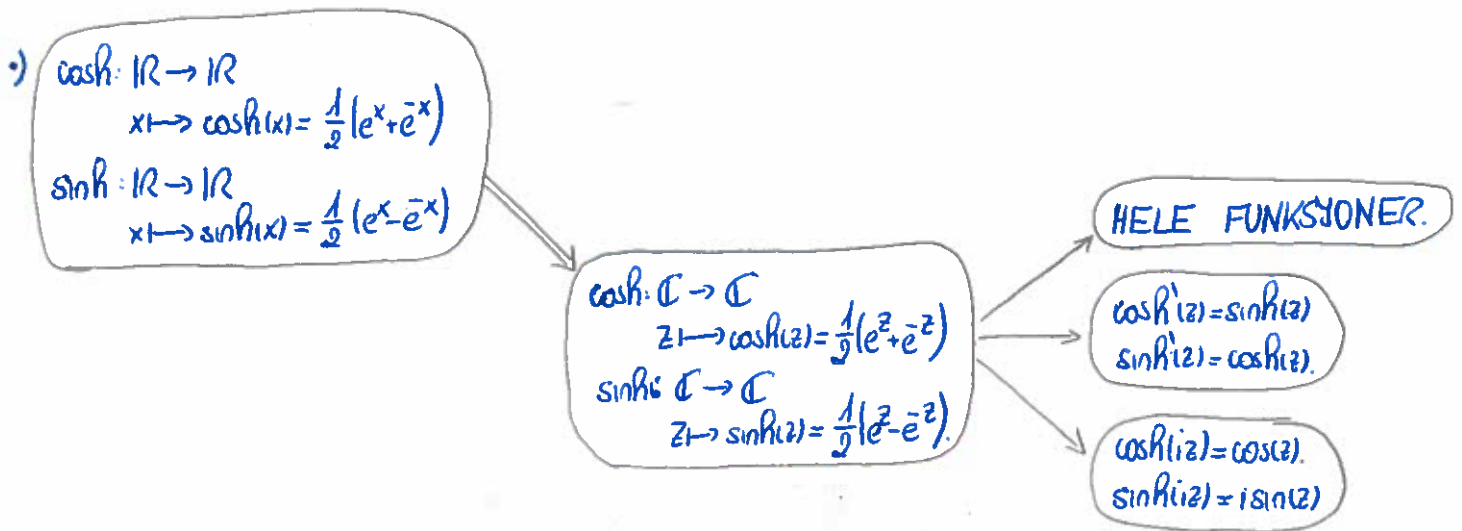
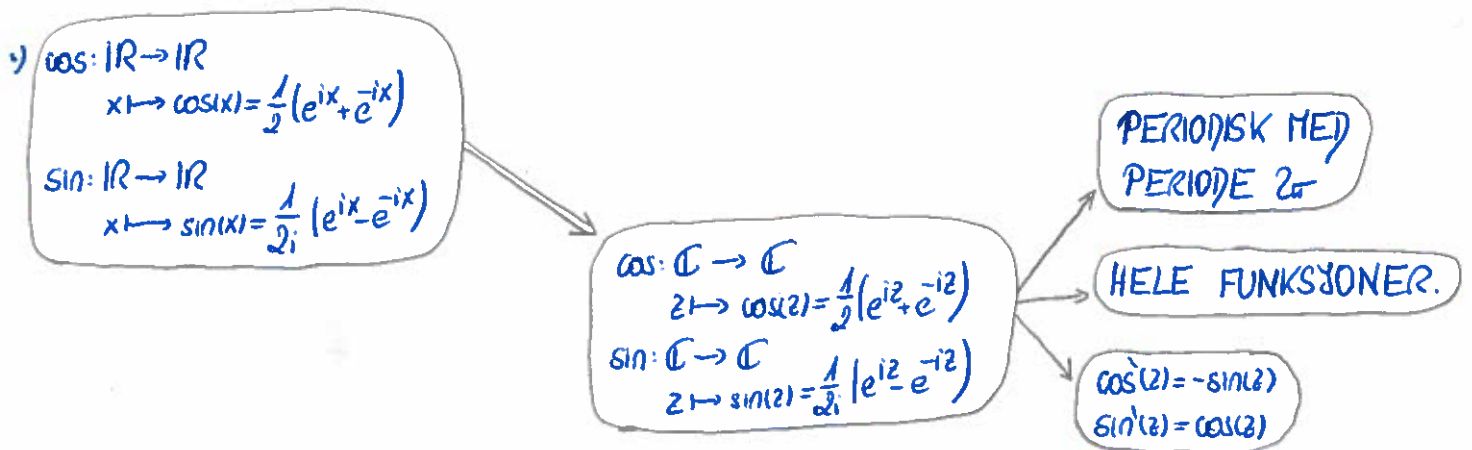
$$z \rightarrow e^z = e^{x+iy} = e^x (\cos(y) + i \sin(y))$$

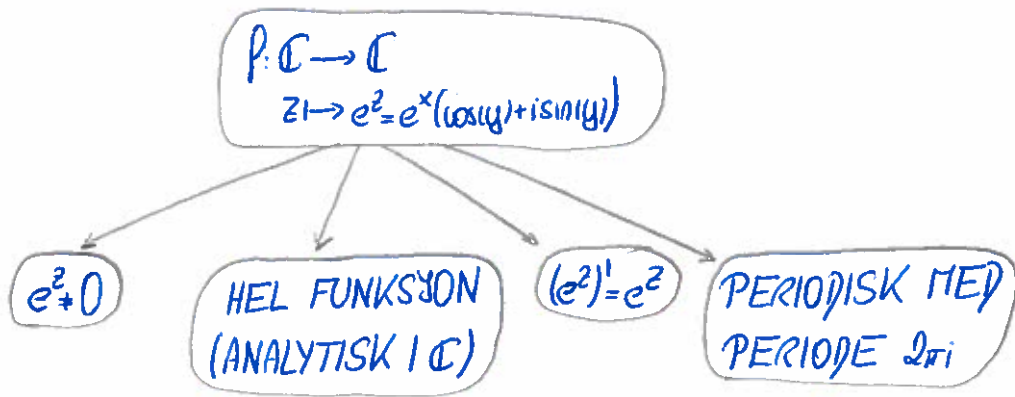




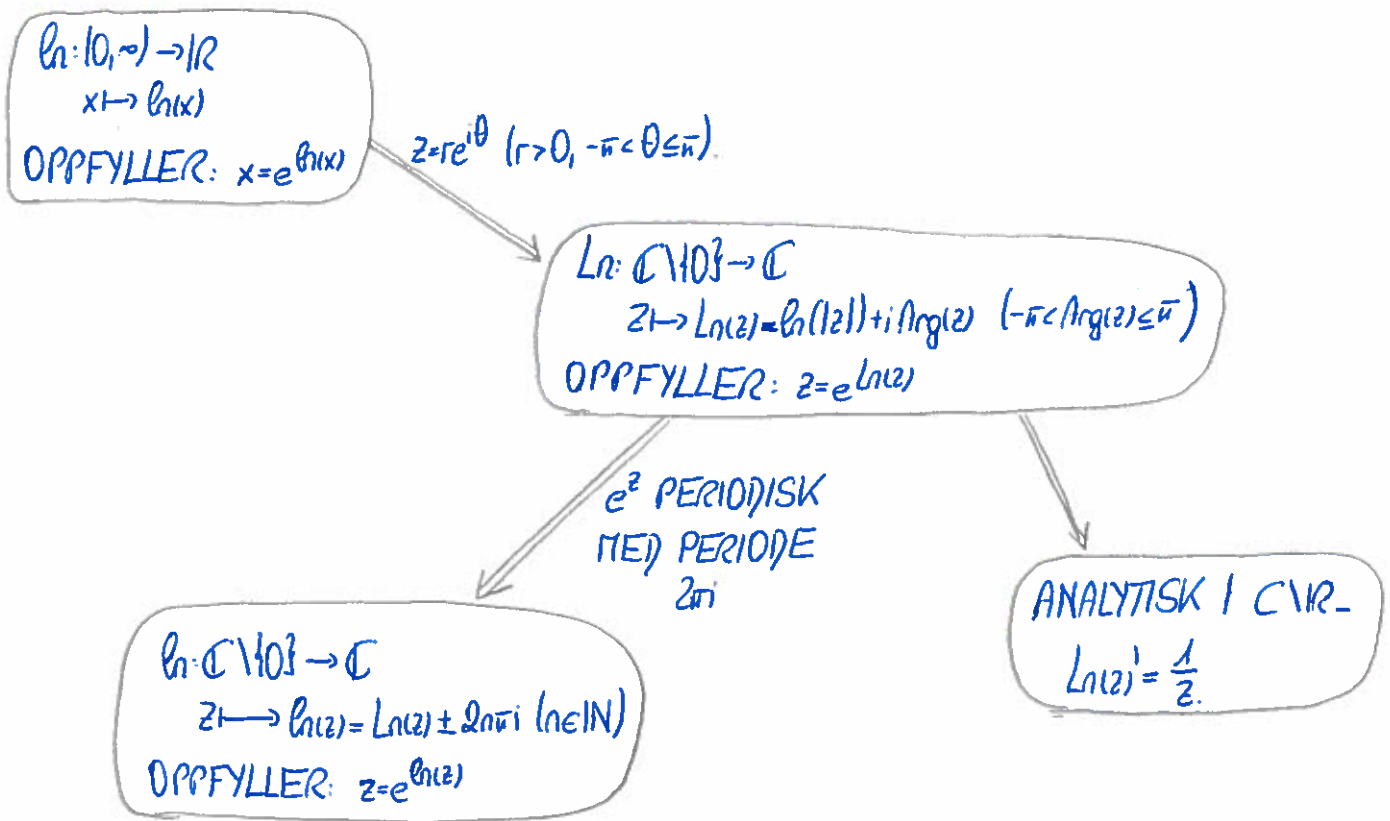


FUNDAMENTALREGION: $\{z = x + iy \mid -\infty < x < \infty, 0 \leq y < 2\pi\}$





FUNDAMENTALREGION: $\{z = x + iy \mid -\pi < y \leq \pi\}$



$$z^c = e^{c \ln(z)}, \quad (c \in \mathbb{C}, z \in \mathbb{C} \setminus \{0\})$$