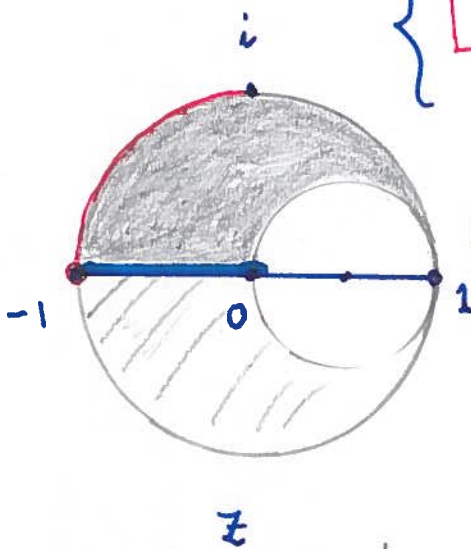




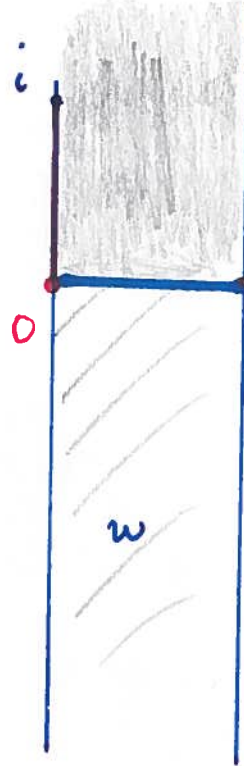
The domain bounded by the circles  $|z|=1$  and  $|z-\frac{1}{2}|=\frac{1}{2}$  is mapped on the upper half-plane.

$$\begin{cases} -1 \rightarrow 0 \\ \boxed{1 \rightarrow \infty} \\ i \rightarrow i \end{cases}$$

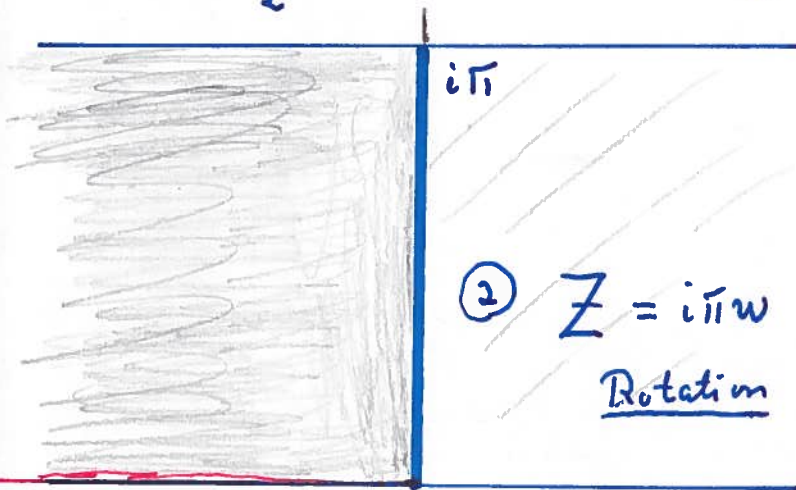


① Möbius  
transf

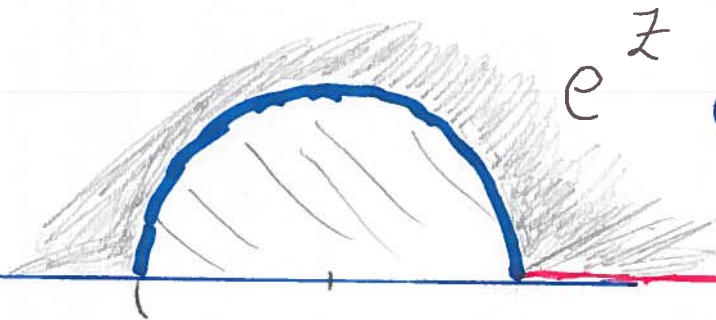
$$w = \frac{1+z}{1-z}$$



Circles through  $\infty$  are lines.



②  $Z = i\pi w$   
Rotation (and mult. with  $\pi$ )



③ exponential function

Answer  $e^{i\pi \frac{1+z}{1-z}}$  maps the domain between the circles onto the upper half-plane.

