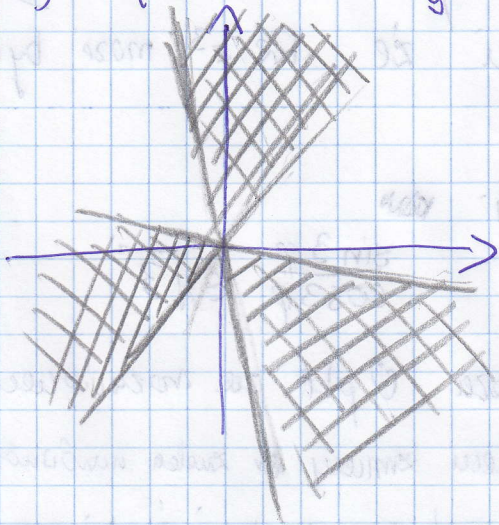


$$b) f(z) = (1-i)z$$

$$(1-i) = \sqrt{2} \left(\cos\left(-\frac{\pi}{4}\right) + i \sin\left(-\frac{\pi}{4}\right) \right)$$

$$f(D) = \left\{ z \in \mathbb{C} : -\frac{2\pi}{9} + \frac{2k\pi}{3} - \frac{\pi}{4} \leq \text{Arg } z \leq \frac{\pi}{9} + \frac{2k\pi}{3} - \frac{\pi}{4} \right\}$$



$$c) g(z) = \frac{1}{z}$$

$$g^{-1}(D) = \left\{ z \in \mathbb{C} : \frac{1}{z} \in D \right\}$$

$$\frac{-2\pi}{9} + \frac{2k\pi}{3} \leq \text{Arg } z^{-1} \leq \frac{\pi}{9} + \frac{2k\pi}{3}$$

$$\frac{2\pi}{9} - \frac{2k\pi}{3} \geq \text{Arg } z \geq -\frac{\pi}{9} - \frac{2k\pi}{3}$$

