

$$\boxed{4.12} \quad \frac{1}{z} > \operatorname{Im}\left(\frac{1}{z}\right) = \operatorname{Im}\left(\frac{1}{x+iy} \cdot \frac{x-iy}{x-iy}\right) = \operatorname{Im}\left(\frac{x-iy}{x^2+y^2}\right) = \frac{-y}{x^2+y^2}$$

$$x^2+y^2 > -2y \rightarrow x^2+(y+1)^2 > 1$$

$$0 < \arg z < \frac{\pi}{4}$$

