

$$z = a + bi = r \cdot e^{i\varphi}$$

$\uparrow \mathbb{R}i$

$$\operatorname{Re}(z) < 0$$

$$\operatorname{Im}(z) > 0$$

$$\frac{\pi}{2} < \varphi < \pi$$

$$\operatorname{Re}(z) > 0$$

$$\operatorname{Im}(z) > 0$$

$$0 < \varphi < \frac{\pi}{2}$$

\mathbb{R}

$$\pi < \varphi < \frac{3\pi}{2}$$

$$\operatorname{Re}(z) < 0$$

$$\operatorname{Im}(z) < 0$$

$$\frac{3\pi}{2} < \varphi < 2\pi$$

$$\operatorname{Re}(z) > 0$$

$$\operatorname{Im}(z) < 0$$