BY GIMUSI 12/08/17

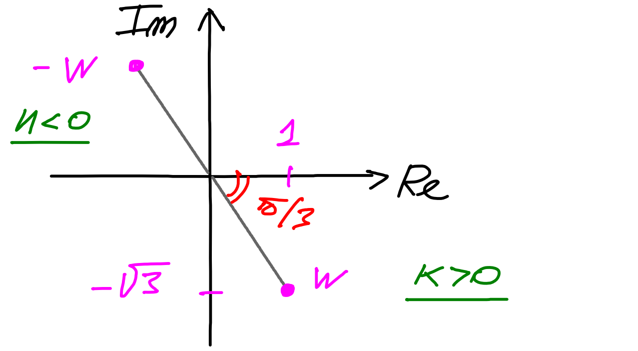
$$e^{\pi(\sqrt{3}+i)z^2} = 1$$

$$\Longleftrightarrow \quad \cancel{\pi}(\sqrt{3}+i)z^2 = 2K\cancel{\pi}i \qquad K \in \mathbb{Z}$$

$$z^2 = \frac{2Ki}{\sqrt{3}+i}\,\frac{\sqrt{3}-i}{\sqrt{3}-i} = \frac{2Ki(\sqrt{3}-i)}{10} =$$

$$= \frac{K}{5}\underbrace{1-\sqrt{3}i}_{W} =$$

$$= \begin{cases} \frac{2K}{5}\, e^{\frac{5}{3}\pi i} & K>0 \\ -\frac{2K}{5}\, e^{\frac{2}{3}\pi i} & K<0 \end{cases}$$



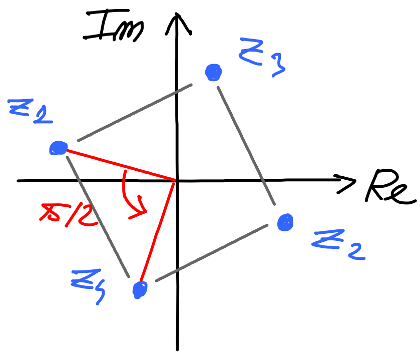
$|W| = 2 \quad Arg(w) = \frac{5}{3}\pi \quad Arg(-w) = \frac{2}{3}\pi$

$K \geq 0$

$$z_1 = \sqrt{\frac{2K}{5}}\; e^{\frac{5}{6}\pi i} \qquad z_2 = \sqrt{\frac{2K}{5}}\; e^{\frac{11}{6}\pi i}$$

$K < 0$

$$z_3 = \sqrt{-\frac{2K}{5}}\; e^{\frac{1}{3}\pi i} \qquad z_4 = \sqrt{-\frac{2K}{5}}\; e^{\frac{4}{3}\pi i}$$



OSS SI PUÓ ANCHE PORRE SEMPLICEMENTE COME SOLUZIONE z_1 E z_2 (O z_3 E z_4) SENZA DISTINGUERE IL SEGNO DI K

INFATTI PER $K<0$

$$z_1 = \sqrt{\frac{2K}{5}}\; e^{\frac{5}{6}\pi i} = \sqrt{\frac{2|K|}{5}}\; i\; e^{\frac{5}{6}\pi i} =$$

$$= \sqrt{\frac{2|K|}{5}}\; e^{\frac{\pi}{2}i}\, e^{\frac{5}{6}\pi i} = \sqrt{\frac{2|K|}{5}}\; e^{\frac{4}{3}\pi i} = z_4$$