

ESEMPIO

$$\sqrt[5]{1} : ? \quad 1 = 1(\cos 0 + i \sin 0)$$

$$\sqrt[5]{1} = \sqrt[5]{1} \left(\cos \frac{0 + 2k\pi}{5} + i \sin \frac{0 + 2k\pi}{5} \right) \quad k=0,1,2,3,4$$

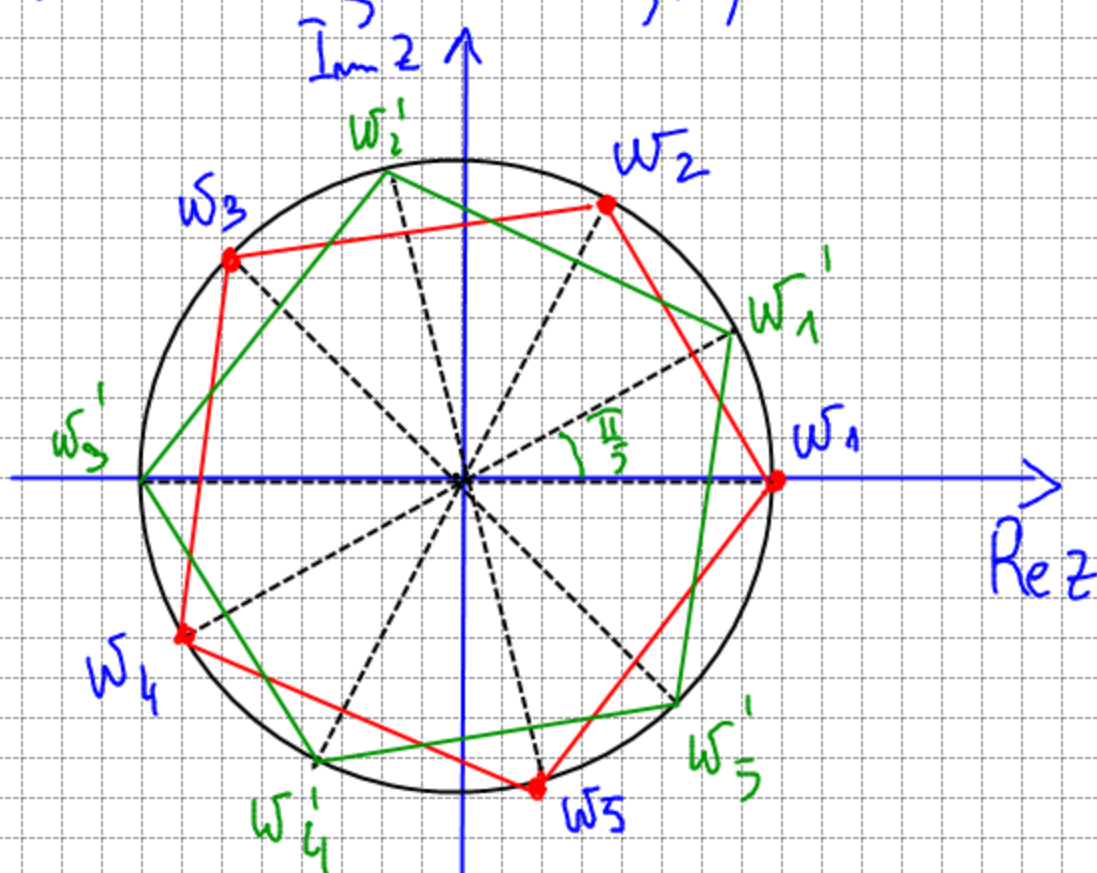
$$k=0 \quad w_1 = \sqrt[5]{1} (\cos 0 + i \sin 0) = 1$$

$$k=1 \quad w_2 = \sqrt[5]{1} \left(\cos \frac{2\pi}{5} + i \sin \frac{2\pi}{5} \right)$$

$$k=2 \quad w_3 = \sqrt[5]{1} \left(\cos \frac{4\pi}{5} + i \sin \frac{4\pi}{5} \right)$$

$$k=3 \quad w_4 = \sqrt[5]{1} \left(\cos \frac{6\pi}{5} + i \sin \frac{6\pi}{5} \right)$$

$$k=4 \quad w_5 = \sqrt[5]{1} \left(\cos \frac{8\pi}{5} + i \sin \frac{8\pi}{5} \right)$$



$$w_1' = \sqrt[5]{1} \left(\cos \frac{\pi}{5} + i \sin \frac{\pi}{5} \right) = z = ? \quad (w_1')^5 = z$$
$$= \cos \frac{\pi}{5} + i \sin \frac{\pi}{5}$$

$$\left(\cos \frac{\pi}{5} + i \sin \frac{\pi}{5} \right)^5 = 1^5 \left(\cos \frac{5\pi}{5} + i \sin \frac{5\pi}{5} \right) =$$
$$= \cos \pi + i \sin \pi = -1$$

$$\sqrt[5]{-1} = ?$$

$$a + ib = \rho (\cos \theta + i \sin \theta)$$

$$-1 = 1 (\cos \pi + i \sin \pi)$$

$$\sqrt[5]{-1} = \sqrt[5]{1} \left(\cos \frac{\pi + 2k\pi}{5} + i \sin \frac{\pi + 2k\pi}{5} \right) \quad k=0,1,2,3,4$$

$$k=0 \quad w_1' = +1 \left(\cos \frac{\pi}{5} + i \sin \frac{\pi}{5} \right) = +\cos \frac{\pi}{5} + i \sin \frac{\pi}{5}$$

$$k=1 \quad w_2' = 1 \left(\cos \frac{3\pi}{5} + i \sin \frac{3\pi}{5} \right)$$

$$k=2 \quad w_3' = 1 \left(\cos \pi + i \sin \pi \right)$$

$$k=3 \quad w_4' = 1 \left(\cos \frac{7\pi}{5} + i \sin \frac{7\pi}{5} \right)$$

$$k=4 \quad w_5' = 1 \left(\cos \frac{9\pi}{5} + i \sin \frac{9\pi}{5} \right)$$

$$z = -1$$