

$$|z|^2 = 4 + 3z^5$$

$$\text{oss } z^5 = \frac{|z|^2 - 4}{3} \in \mathbb{R} \leadsto z^5 = \pm |z|^5$$

$$1) z^5 = |z|^5 \leadsto |z|^2 = 4 + 3|z|^5 \quad 3|z|^5 - |z|^2 + 4 = 0$$

$$|z|^2 = \frac{1 \pm \sqrt{1-58}}{6} \in \mathbb{C} \quad \text{IMPOSSIBILE}$$

$$2) z^5 = -|z|^5 \leadsto |z|^2 = 4 - 3|z|^5 \quad -3|z|^5 - |z|^2 + 4 = 0$$

$$|z|^2 = \frac{1 \pm \sqrt{1+58}}{-6} \begin{cases} = 1 \\ = -5/3 \end{cases} \quad \text{IMPOSSIBILE}$$

$$|z|^2 = 1 \leadsto |z| = 1$$

$$|z|^2 = 4 + 3z^5 \leadsto 1 = 4 + 3z^5 \quad z^5 = -1$$

$$z^5 = e^{i\pi} \leadsto z_1 = e^{i\frac{\pi}{5}} \quad z_2 = e^{i\frac{3\pi}{5}} \quad z_3 = e^{i\frac{5\pi}{5}} \quad z_4 = e^{i\frac{7\pi}{5}}$$

