1. True or False?

$$\left(\frac{1 + \sqrt{3}i}{2}\right)^3 = -1.$$

2.   True or False?

Suppose $z \in \mathbf{C}$ is such that $\mathrm{Re}(z^n) \geq 0$ for every positive integer n. Then z is a nonnegative real number.

3. True or False?

i has two distinct square roots in **C**.