Adwait Noravane
(9MS15)

Assignment - 1

Question in video.

$$z = -1 - \sqrt{3}\, i$$

$$z^{1/4} = ?$$

$$z = 2\left(-\frac{1}{2} - \frac{\sqrt{3}}{2} i\right) = 2(-1)\left(\frac{1}{2} + \frac{\sqrt{3}}{2} i\right) = 2e^{i\pi} e^{i\pi/3}$$

$$\Rightarrow z^{1/4} = (e)^{1/4} e^{i\pi/3} = (2)^{1/4} \left(\frac{1}{2} + \frac{\sqrt{3}}{2} i\right)$$