



$$z^{\frac{1}{n}} = r^{\frac{1}{n}} \left( \cos\left(\frac{\theta + 2k\pi}{n}\right) + i \sin\left(\frac{\theta + 2k\pi}{n}\right) \right)$$

$$k = 0, 1, 2, \dots, n-1$$

216 is real.

$$\theta = 0$$

$$x^3 = 216$$

$$x^3 - 216$$

$$6) \begin{array}{r} 1 \quad 0 \quad 0 \quad -216 \\ \quad 6 \quad 36 \quad 216 \\ \hline 1 \quad 6 \quad 36 \quad 0 \end{array}$$

$$x^2 + 6x + 36 = 0$$

$$x^2 + 6x + 3^2 = -36 + 9$$

$$(x+3)^2 = -27$$

$$x+3 = \pm i\sqrt{27} = \pm 3i\sqrt{3}$$

$$x = -3 \pm 3i\sqrt{3}$$

$$k=0$$

$$-3 + 3i\sqrt{3} = 6 \left( \cos\left(\frac{2\pi}{3}\right) + i \sin\left(\frac{2\pi}{3}\right) \right) \quad k=1$$

$$-3 - 3i\sqrt{3} = 6 \left( \cos\left(\frac{4\pi}{3}\right) + i \sin\left(\frac{4\pi}{3}\right) \right) \quad k=2$$