

3.93  
P9

$$\begin{aligned} \left(1 + \cos\frac{\pi}{3} + i\sin\frac{\pi}{3}\right)^6 &= \left(1 + \frac{1}{2} + \frac{\sqrt{3}}{2}i\right)^6 = \left(\frac{3}{2} + \frac{\sqrt{3}}{2}i\right)^6 = (\sqrt{3}\operatorname{cis}30)^6 = \\ &= 27\operatorname{cis}180 = -27 \end{aligned}$$