フクソルルー5

(1)(2)

次の複素数を極形式で表せ。ただし偏角$\theta$の範囲は$0 \leqq \theta < 2\pi$とする

(1) $\sqrt{3}+i$

(2) $-4$

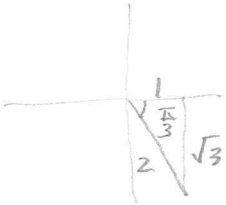
(3) $\dfrac{1}{1+\sqrt{3}i}$

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

$= 2\left(\cos\frac{\pi}{6} + i\sin\frac{\pi}{6}\right)$

(2) $-4 = 4(\cos\pi + i\sin\pi)$

(3) $\dfrac{1}{1+\sqrt{3}i} = \dfrac{1-\sqrt{3}i}{(1+\sqrt{3}i)(1-\sqrt{3}i)}$




$= \dfrac{1-\sqrt{3}i}{4}$

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

$2\pi - \frac{\pi}{3} = \frac{5}{3}\pi$

$= \frac{1}{2}\left(\cos\frac{5}{3}\pi + i\sin\frac{5}{3}\pi\right)$