**76** 以下の方程式，不等式を解け．ただし，$0 \leqq \theta < 2\pi$ とする．

(1) $\cos\theta = \dfrac{1}{2}$

(2) $2\sin\theta = -\sqrt{3}$

(3) $3\tan\theta = \sqrt{3}$

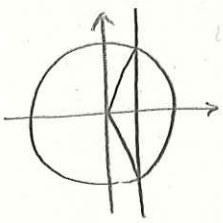
(4) $\sin\theta > \dfrac{1}{2}$

(5) $\tan\theta < 1$

(6) $2\cos\left(\theta - \dfrac{1}{6}\pi\right) \leqq \sqrt{3}$

(7) $2\sin\left(\theta + \dfrac{1}{3}\pi\right) \geqq 1$

(1)

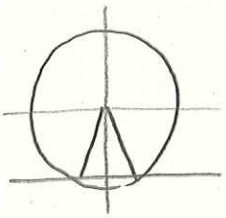


$\cos\theta = \frac{1}{2}$

$\theta = \frac{\pi}{3}, \frac{5}{3}\pi$

(2) $2\sin\theta = -\sqrt{3}$

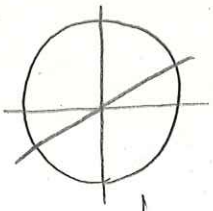
$\sin\theta = -\frac{\sqrt{3}}{2}$



$\theta = \frac{4}{3}\pi, \frac{5}{3}\pi$

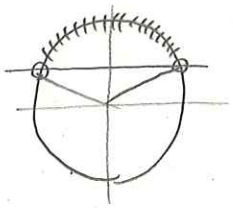
(3) $3\tan\theta = \sqrt{3}$

$\tan\theta = \frac{1}{\sqrt{3}}$



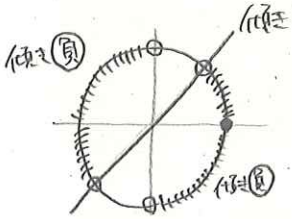
$\theta = \frac{\pi}{6}, \frac{7}{6}\pi$

(4) $\sin\theta > \frac{1}{2}$



$\frac{\pi}{6} < \theta < \frac{5}{6}\pi$

(5) $\tan\theta < 1$.




左図より

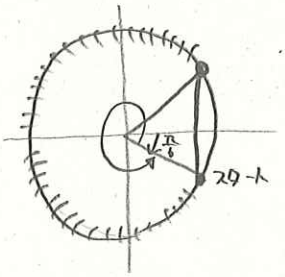
$0 \leqq \theta < \frac{\pi}{4}$,

$\frac{\pi}{2} < \theta < \frac{5}{4}\pi$,

$\frac{3}{2}\pi < \theta < 2\pi$

(6) $2\cos\left(\theta - \frac{\pi}{6}\right) \leqq \sqrt{3}$.

$\cos\left(\theta - \frac{\pi}{6}\right) \leqq \frac{\sqrt{3}}{2}$

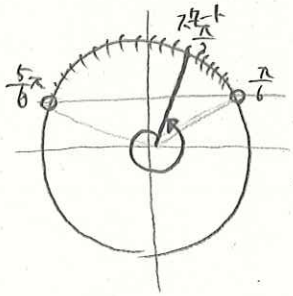



左図より．

$\theta = 0, \frac{\pi}{3} \leqq \theta < 2\pi$

(7) $2\sin\left(\theta + \frac{1}{3}\pi\right) \geqq 1$.

$\sin\left(\theta + \frac{1}{3}\pi\right) > \frac{1}{2}$




左図より

$0 \leqq \theta < \frac{\pi}{2}, \frac{11}{6}\pi < \theta < 2\pi$