三角不等式2

1. 次の不等式を解け。

(1) $sin\left(\theta+\frac{\pi}{6}\right) \geqq \frac{\sqrt{3}}{2} \quad (0 \leqq \theta < 2\pi)$

(2) $cos\left(\theta+\frac{\pi}{3}\right) < -\frac{\sqrt{3}}{2} \quad (0 \leqq \theta < 2\pi)$

(3) $tan\left(\theta-\frac{\pi}{4}\right) \leqq -1 \quad (0 \leqq \theta < 2\pi)$

(4) $tan\left(\theta-\frac{\pi}{6}\right) < \frac{1}{\sqrt{3}} \quad (0 \leqq \theta < 2\pi)$

2. 次の不等式を解け。

(1) $sin\left(\theta-\frac{\pi}{4}\right) < \frac{1}{\sqrt{2}} \quad (0 \leqq \theta < 2\pi)$

(2) $cos\left(\theta-\frac{\pi}{4}\right) \geqq \frac{1}{2} \quad (0 \leqq \theta < 2\pi)$

(3) $tan\left(\theta+\frac{\pi}{3}\right) \leqq 1 \quad (0 \leqq \theta < 2\pi)$

(4) $tan\left(\theta+\frac{\pi}{6}\right) \geqq -\sqrt{3} \quad (0 \leqq \theta < 2\pi)$

3. 次の不等式を解け。

(1) $sin\left(\theta-\frac{5}{6}\pi\right) \leqq \frac{1}{2} \quad (0 \leqq \theta < 2\pi)$

(2) $cos\left(\theta+\frac{7}{6}\pi\right) \geqq -\frac{1}{2} \quad (0 \leqq \theta < 2\pi)$

(3) $tan\left(\theta-\frac{2}{3}\pi\right) \leqq -\frac{1}{\sqrt{3}} \quad (0 \leqq \theta < 2\pi)$

(4) $tan\left(\theta+\frac{3}{4}\pi\right) \leqq \sqrt{3} \quad (0 \leqq \theta < 2\pi)$

4. 次の不等式を解け。

(1) $sin\left(\theta+\frac{2}{3}\pi\right) > -\frac{1}{2} \quad (0 \leqq \theta < 2\pi)$

(2) $cos\left(\theta-\frac{5}{4}\pi\right) < \frac{\sqrt{3}}{2} \quad (0 \leqq \theta < 2\pi)$

(3) $tan\left(\theta+\frac{5}{6}\pi\right) \geqq -1 \quad (0 \leqq \theta < 2\pi)$

(4) $tan\left(\theta+\frac{5}{3}\pi\right) \geqq \frac{1}{\sqrt{3}} \quad (0 \leqq \theta < 2\pi)$

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三角不等式2 解答

1. (1) $\frac{\pi}{6} \leqq \theta \leqq \frac{\pi}{2}$ (2) $\frac{\pi}{2} < \theta < \frac{5}{6}\pi$

(3) $\frac{3}{4}\pi < \theta \leqq \pi,\ \frac{7}{4}\pi < \theta < 2\pi$ (4) $0 \leqq \theta < \frac{\pi}{3},\ \frac{2}{3}\pi < \theta < \frac{4}{3}\pi,\ \frac{5}{3}\pi < \theta < 2\pi$

2. (1) $0 \leqq \theta < \frac{\pi}{2},\ \pi < \theta < 2\pi$ (2) $0 \leqq \theta \leqq \frac{7}{12}\pi,\ \frac{23}{12}\pi \leqq \theta < 2\pi$

(3) $\frac{\pi}{6} \leqq \theta < \frac{11}{12}\pi,\ \frac{7}{6}\pi < \theta \leqq \frac{23}{12}\pi$ (4) $0 \leqq \theta < \frac{\pi}{3},\ \frac{\pi}{2} \leqq \theta < \frac{4}{3}\pi,\ \frac{3}{2}\pi \leqq \theta < 2\pi$

3. (1) $0 \leqq \theta \leqq \pi,\ \frac{5}{3}\pi \leqq \theta < 2\pi$ (2) $\frac{\pi}{6} \leqq \theta \leqq \frac{3}{2}\pi$

(3) $\frac{\pi}{6} < \theta \leqq \frac{\pi}{2},\ \frac{7}{6}\pi < \theta \leqq \frac{3}{2}\pi$ (4) $0 \leqq \theta \leqq \frac{7}{12}\pi,\ \frac{3}{4}\pi < \theta \leqq \frac{19}{12}\pi,\ \frac{7}{4}\pi < \theta < 2\pi$

4. (1) $0 \leqq \theta < \frac{\pi}{2},\ \frac{7}{6}\pi < \theta < 2\pi$ (2) $0 \leqq \theta < \frac{13}{12}\pi,\ \frac{17}{12}\pi < \theta < 2\pi$

(3) $0 \leqq \theta < \frac{2}{3}\pi,\ \frac{11}{12}\pi < \theta \leqq \frac{5}{3}\pi,\ \frac{23}{12}\pi < \theta \leqq 2\pi$ (4) $\frac{\pi}{2} \leqq \theta < \frac{5}{6}\pi,\ \frac{3}{2}\pi \leqq \theta < \frac{11}{6}\pi$

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