

Solve the following inequalities for θ

$$\sin \theta \leq \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, \frac{\pi}{4}] \cup [\frac{3\pi}{4}, \pi)$$

$$\sin \theta < -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{4}{3}\pi, \frac{5}{3}\pi)$$

$$\sin \theta < -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{2}{3}\pi, -\frac{\pi}{3})$$

$$\sin \theta < \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{4}) \cup (\frac{3\pi}{4}, 2\pi)$$

$$\cos \theta > \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{\pi}{6}, \frac{\pi}{6})$$

$$\sin \theta \leq \frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, \frac{\pi}{6}] \cup [\frac{5\pi}{6}, \pi)$$

$$\cos \theta \leq \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{\pi}{4}, \frac{7\pi}{4}]$$

$$\cos \theta \leq 0 \quad 0 \leq \theta < 2\pi \quad [\frac{\pi}{2}, \frac{3\pi}{2}]$$

$$\sin \theta < -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{7\pi}{6}, \frac{11\pi}{6})$$

$$\cos \theta < -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{5\pi}{6}, \frac{7\pi}{6})$$

$$\cos \theta > \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{\pi}{4}, \frac{\pi}{4})$$

$$\sin \theta < 0 \quad 0 \leq \theta < 2\pi \quad (\pi, 2\pi)$$

$$\cos \theta > -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{5\pi}{6}, \frac{5\pi}{6})$$

$$\cos \theta \geq -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\frac{3}{4}\pi, \frac{3}{4}\pi]$$

$$\sin \theta \geq \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad \left[\frac{\pi}{4}, \frac{3\pi}{4} \right]$$

$$\sin \theta \leq \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\pi, \frac{\pi}{3} \right] \cup \left[\frac{2\pi}{3}, \pi \right)$$

$$\cos \theta > 0 \quad -\pi \leq \theta < \pi \quad \left(-\frac{\pi}{2}, \frac{\pi}{2} \right)$$

$$\cos \theta \leq -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad \left[\frac{5\pi}{6}, \frac{7\pi}{6} \right]$$

$$\sin \theta > -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{4\pi}{3} \right) \cup \left(\frac{5\pi}{3}, 2\pi \right)$$

$$\sin \theta \leq -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[\frac{7\pi}{6}, \frac{11\pi}{6} \right]$$

$$\sin \theta \geq -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{7\pi}{6} \right] \cup \left[\frac{11\pi}{6}, 2\pi \right)$$

$$\sin \theta \leq -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad \left[\frac{4\pi}{3}, \frac{5\pi}{3} \right]$$

$$\cos \theta < \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left(\frac{\pi}{3}, \frac{5\pi}{3} \right)$$

$$\sin \theta > 0 \quad 0 \leq \theta < 2\pi \quad (0, \pi)$$

$$\cos \theta < -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left(\frac{2\pi}{3}, \frac{4\pi}{3} \right)$$

$$\sin \theta > \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad \left(\frac{\pi}{4}, \frac{3\pi}{4} \right)$$

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

$$\cos \theta < \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\pi, -\frac{\pi}{4} \right) \cup \left(\frac{\pi}{4}, \pi \right)$$

$$\cos \theta \geq 0 \quad -\pi \leq \theta < \pi \quad \left[-\frac{\pi}{2}, \frac{\pi}{2} \right]$$

$$\cos \theta \geq -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\frac{5\pi}{6}, \frac{5\pi}{6}\right]$$

$$\cos \theta \geq \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\frac{\pi}{4}, \frac{\pi}{4}\right]$$

$$\cos \theta > \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{\pi}{3}\right) \cup \left(\frac{5\pi}{3}, 2\pi\right)$$

$$\cos \theta \geq \frac{1}{2} \quad -\pi \leq \theta < \pi \quad \left[-\frac{\pi}{3}, \frac{\pi}{3}\right]$$

$$\cos \theta > -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{5\pi}{6}\right) \cup \left(\frac{7\pi}{6}, 2\pi\right)$$

$$\cos \theta \geq -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{2\pi}{3}\right] \cup \left[\frac{4\pi}{3}, 2\pi\right)$$

$$\sin \theta > \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad \left(\frac{\pi}{3}, \frac{2\pi}{3}\right)$$

$$\cos \theta \leq \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\pi, -\frac{\pi}{4}\right] \cup \left[\frac{\pi}{4}, \pi\right)$$

$$\sin \theta \leq \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{\pi}{4}\right] \cup \left[\frac{3\pi}{4}, 2\pi\right)$$

$$\sin \theta \geq \frac{1}{2} \quad -\pi \leq \theta < \pi \quad \left[\frac{\pi}{6}, \frac{5\pi}{6}\right]$$

$$\sin \theta \geq \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad \left[\frac{\pi}{3}, \frac{2\pi}{3}\right]$$

$$\cos \theta \geq -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad \left[-\frac{2\pi}{3}, \frac{2\pi}{3}\right]$$

$$\sin \theta \leq \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{\pi}{6}\right] \cup \left[\frac{5\pi}{6}, 2\pi\right)$$

$$\cos \theta > \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad \left[0, \frac{\pi}{4}\right) \cup \left(\frac{7\pi}{4}, 2\pi\right)$$

$$\cos \theta < -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad \left[-\pi, -\frac{5\pi}{6}\right) \cup \left(\frac{5\pi}{6}, \pi\right)$$

$$\cos \theta > -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{2}{3}\pi) \cup (\frac{4}{3}\pi, 2\pi)$$

$$\sin \theta \geq \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{\pi}{3}, \frac{2\pi}{3}]$$

$$\cos \theta \leq -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{2\pi}{3}, \frac{4\pi}{3}]$$

$$\cos \theta \leq -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{5\pi}{6}] \cup [\frac{5\pi}{6}, \pi)$$

$$\cos \theta \geq \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{4}] \cup [\frac{7\pi}{4}, 2\pi)$$

$$\sin \theta \geq 0 \quad 0 \leq \theta < 2\pi \quad [0, \pi]$$

$$\sin \theta < \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{6}) \cup (\frac{5\pi}{6}, 2\pi)$$

$$\sin \theta < \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{3}) \cup (\frac{2\pi}{3}, 2\pi)$$

$$\cos \theta < -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{3}{4}\pi) \cup (\frac{3}{4}\pi, \pi)$$

$$\sin \theta \leq \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{3}] \cup [\frac{2}{3}\pi, 2\pi)$$

$$\cos \theta \geq -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{3}{4}\pi] \cup [\frac{5}{4}\pi, 2\pi)$$

$$\sin \theta \geq 0 \quad -\pi \leq \theta < \pi \quad \{-\pi\} \cup [0, \pi)$$

$$\cos \theta \geq 0 \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{2}] \cup [\frac{3}{2}\pi, 2\pi)$$

$$\sin \theta < -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{5}{4}\pi, \frac{7}{4}\pi)$$

$$\sin \theta \geq -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{4}{3}\pi] \cup [\frac{5}{3}\pi, 2\pi)$$

$$\sin \theta > \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad \left(\frac{\pi}{3}, \frac{2\pi}{3} \right)$$

$$\sin \theta \geq -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{3}{4}\pi] \cup [-\frac{\pi}{4}, \pi)$$

$$\sin \theta > 0 \quad -\pi \leq \theta < \pi \quad (0, \pi)$$

$$\sin \theta > \frac{1}{2} \quad -\pi \leq \theta < \pi \quad \left(\frac{\pi}{6}, \frac{5\pi}{6} \right)$$

$$\sin \theta \leq -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\frac{2\pi}{3}, -\frac{\pi}{3}]$$

$$\cos \theta \geq -\frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{5}{6}\pi] \cup [\frac{7\pi}{6}, 2\pi)$$

$$\cos \theta \leq \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[\frac{\pi}{3}, \frac{5\pi}{3} \right]$$

$$\sin \theta > -\frac{1}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{7}{6}\pi) \cup (\frac{11\pi}{6}, 2\pi)$$

$$\cos \theta \leq -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{2}{3}\pi] \cup [\frac{2\pi}{3}, \pi)$$

$$\cos \theta < \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad \left(\frac{\pi}{4}, \frac{7}{4}\pi \right)$$

$$\sin \theta > -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{5}{4}\pi) \cup (\frac{7}{4}\pi, 2\pi)$$

$$\sin \theta < \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, \frac{\pi}{4}) \cup (\frac{3}{4}\pi, \pi)$$

$$\sin \theta \geq \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad \left[\frac{\pi}{6}, \frac{5}{6}\pi \right]$$

$$\sin \theta < 0 \quad -\pi \leq \theta < \pi \quad (-\pi, 0)$$

$$\cos \theta > -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{3}{4}\pi) \cup (\frac{5}{4}\pi, 2\pi)$$

$$\sin \theta \leq 0 \quad -\pi \leq \theta < \pi \quad [-\pi, 0]$$

$$\sin \theta \leq -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\frac{5}{6}\pi, -\frac{\pi}{6}]$$

$$\sin \theta \geq -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{5}{4}\pi] \cup [\frac{7}{4}\pi, 2\pi)$$

$$\sin \theta \geq \frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{\pi}{4}, \frac{3}{4}\pi]$$

$$\cos \theta > \frac{1}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{\pi}{3}, \frac{\pi}{3})$$

$$\cos \theta \geq \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{3}] \cup [\frac{5}{3}\pi, 2\pi)$$

$$\cos \theta < 0 \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{2}) \cup (\frac{\pi}{2}, \pi)$$

$$\sin \theta < -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{3}{4}\pi, -\frac{\pi}{4})$$

$$\cos \theta < \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{\pi}{6}, \frac{11}{6}\pi)$$

$$\sin \theta > \frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad (\frac{\pi}{4}, \frac{3}{4}\pi)$$

$$\cos \theta > \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{6}] \cup (\frac{11}{6}\pi, 2\pi)$$

$$\sin \theta > \frac{1}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{\pi}{6}, \frac{5}{6}\pi)$$

$$\sin \theta \leq -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{5}{4}\pi, \frac{7}{4}\pi]$$

$$\sin \theta < \frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, \frac{\pi}{6}) \cup (\frac{5}{6}\pi, \pi)$$

$$\cos \theta < \frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{3}) \cup (\frac{\pi}{3}, \pi)$$

$$\sin \theta < \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, \frac{\pi}{3}) \cup (\frac{2}{3}\pi, \pi)$$

$$\cos \theta \geq \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{6}] \cup [\frac{11}{6}\pi, 2\pi)$$

$$\sin \theta > -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{3}{4}\pi) \cup (-\frac{\pi}{4}, \pi)$$

$$\cos \theta < -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad (\frac{3}{4}\pi, \frac{5}{4}\pi)$$

$$\cos \theta > -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{3}{4}\pi, \frac{3}{4}\pi)$$

$$\sin \theta > -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{5}{6}\pi) \cup (-\frac{\pi}{6}, \pi)$$

$$\sin \theta > -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{2}{3}\pi) \cup (-\frac{\pi}{3}, \pi)$$

$$\cos \theta \leq \frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{3}] \cup [\frac{\pi}{3}, \pi)$$

$$\cos \theta \leq \frac{\sqrt{3}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{\pi}{6}, \frac{11}{6}\pi]$$

$$\cos \theta < 0 \quad 0 \leq \theta < 2\pi \quad (\frac{\pi}{2}, \frac{3}{2}\pi)$$

$$\cos \theta \leq -\frac{\sqrt{2}}{2} \quad 0 \leq \theta < 2\pi \quad [\frac{3}{4}\pi, \frac{5}{4}\pi]$$

$$\sin \theta \geq -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{5}{6}\pi] \cup [-\frac{\pi}{6}, \pi)$$

$$\sin \theta \leq 0 \quad 0 \leq \theta < 2\pi \quad \{0\} \cup [\pi, 2\pi)$$

$$\sin \theta \geq -\frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{2}{3}\pi] \cup [-\frac{\pi}{3}, \pi)$$

$$\cos \theta \geq \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\frac{\pi}{6}, \frac{\pi}{6}]$$

$$\sin \theta \leq -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\frac{3}{4}\pi, -\frac{\pi}{4}]$$

$$\cos \theta < -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{2}{3}\pi) \cup (\frac{2}{3}\pi, \pi)$$

$$\cos \theta \leq -\frac{\sqrt{2}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{3}{4}\pi] \cup [\frac{3}{4}\pi, \pi]$$

$$\cos \theta \leq 0 \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{2}] \cup [\frac{\pi}{2}, \pi)$$

$$\cos \theta > -\frac{1}{2} \quad -\pi \leq \theta < \pi \quad (-\frac{2}{3}\pi, \frac{2}{3}\pi)$$

$$\cos \theta \leq \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{6}] \cup [\frac{\pi}{6}, \pi)$$

$$\cos \theta < \frac{\sqrt{3}}{2} \quad -\pi \leq \theta < \pi \quad [-\pi, -\frac{\pi}{6}) \cup (\frac{\pi}{6}, \pi)$$

$$\cos \theta > 0 \quad 0 \leq \theta < 2\pi \quad [0, \frac{\pi}{2}) \cup (\frac{3}{2}\pi, 2\pi)$$