

$$\textcircled{5} \cos\left(x + \frac{3\pi}{4}\right) - \cos\left(x - \frac{3\pi}{4}\right) = 0$$

$$\cos x \cos \frac{3\pi}{4} - \sin x \sin \frac{3\pi}{4} - \left(\cos x \cos \frac{3\pi}{4} + \sin x \sin \frac{3\pi}{4}\right) = 0$$

$$\cancel{-\frac{\sqrt{2}}{2} \cos x} - \frac{\sqrt{2}}{2} \sin x + \cancel{\frac{\sqrt{2}}{2} \cos x} - \frac{\sqrt{2}}{2} \sin x = 0$$

$$-2 \cdot \frac{\sqrt{2}}{2} \sin x = 0$$

$$-\sqrt{2} \sin x = 0$$

$$\sin x = 0$$

$$x = 0, \pi$$