

4.9
4

$$\cos^2 x + \sin^2 2x = \cos^2 2x - \cos x$$

$$0 \leq x \leq \pi$$

$$\cos 2x + \cos x = \cos^2 2x - \sin^2 2x$$

$$2 \cos 4x \cos 3x = (\cos 2x - \cos(\frac{\pi}{2} - 2x))(\cos 2x + \cos(\frac{\pi}{2} - 2x))$$

$$2 \cos 4x \cos 3x = -2 \sin \frac{\pi}{4} \sin(2x - \frac{\pi}{4}) \cdot 2 \cos \frac{\pi}{4} \cos(2x - \frac{\pi}{4})$$

$$2 \cos 4x \cos 3x = -\sin \frac{\pi}{2} \sin(4x - \frac{\pi}{2})$$

$$2 \cos 4x \cos 3x = \cos 4x$$

$$\cos 4x (2 \cos 3x - 1) = 0$$

$$\downarrow$$
$$4x = \frac{\pi}{2} + \pi k$$
$$x = \frac{\pi}{8} + \frac{\pi k}{4}$$

$$\downarrow$$
$$3x = \frac{\pm \pi}{3} + 2\pi k$$
$$x = \pm \frac{\pi}{9} + \frac{2\pi k}{3}$$

$$\frac{\pi}{9}, \frac{11\pi}{9}, \frac{3\pi}{8}, \frac{5\pi}{9}, \frac{5\pi}{8}, \frac{7\pi}{8}, \frac{7\pi}{9}$$

תחום ההגדרה
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