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$$\log_{\cos 2x} (\cos x + \cos 3x) = 1$$

$$\boxed{2\pi k - \frac{3\pi}{2} < 2x < \frac{\pi}{2} + 2\pi k}$$

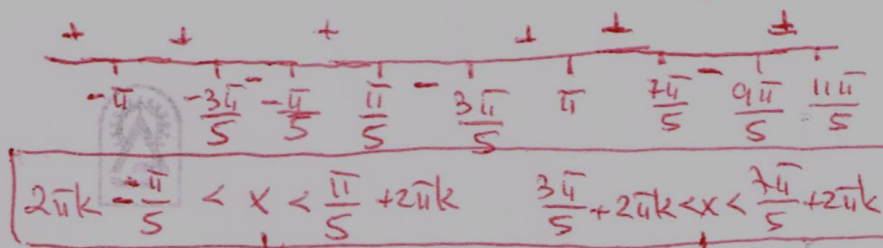
$$x \neq 2\pi k$$

$$\cos x + \cos 2x > 0$$

$$2 \cos 2x \cos x > 0$$

$$\cos x = \frac{\pi}{2} + \pi k \quad 2 \cos x = \frac{\pi}{2} + \pi k$$

$$x = \frac{\pi}{2} + 2\pi k \quad x = \frac{\pi}{5} + \frac{2\pi k}{5}$$



אם $x = \frac{\pi}{2} + \pi k$ אז $\cos x = 0$ ולכן לא ייתכן
אם $x = \frac{\pi}{5} + \frac{2\pi k}{5}$ אז $\cos x > 0$ וייתכן

$$\log_{\cos 2x} (\cos x + \cos 3x) = 1$$

$$\cos x + \cos 3x = \cos 2x$$

$$2 \cos 2x \cos x = \cos 2x$$

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

$$\downarrow \quad \rightarrow$$

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

$$\boxed{x = \frac{\pi}{4} + \pi k} \quad \boxed{x = \pm \frac{\pi}{3} + 2\pi k}$$

אם $x = \frac{\pi}{4} + \pi k$ אז $\cos 2x = 0$ ולכן לא ייתכן
אם $x = \pm \frac{\pi}{3} + 2\pi k$ אז $\cos 2x > 0$ וייתכן