

2.19
2

$$\sin x + \sin 3x = \sin 2x + \sin 4x$$

$$2 \sin 2x \cos x = 2 \sin 3x \cos x \quad /: 2$$

$$\cos x (\sin 2x - \sin 3x) = 0$$

$$\boxed{x = \frac{\pi}{2} + \pi k}$$

$k \in \mathbb{Z}$

$$\rightarrow \sin 2x = \sin 3x$$

$$2x = 3x + 2\pi k$$

$$\boxed{x = 2\pi k}$$

$$2x = \pi - 3x + 2\pi k$$

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