

2.14
1

$$\sin x + \sin 3x + \cos x = 0$$

$$2 \sin 2x \cos x + \cos x = 0$$

$$\cos x (2 \sin 2x + 1) = 0$$

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

$$\rightarrow \sin 2x = -\frac{1}{2}$$

$$2x = -\frac{\pi}{6} + 2\pi k$$

$$\rightarrow \boxed{x = -\frac{\pi}{12} + \pi k}$$

$k \in \mathbb{Z}$

$$2x = \frac{7\pi}{6} + 2\pi k$$

$$\rightarrow \boxed{x = \frac{7\pi}{12} + \pi k}$$