2.67
5

$2\sin 5x + \sqrt{3}\cos 3x + \sin 3x = 0 \quad /:2$

$\sin 5x + \frac{\sqrt{3}}{2}\cos 3x + \frac{1}{2}\sin 3x = 0$

$\sin 5x + \sin 60 \cos 3x + \cos 60 \sin 3x = 0$

$\sin 5x + \sin(60+3x) = 0$

$\sin 5x = -\sin(60+3x)$

$\sin 5x = \sin(-60-3x)$

$5x = -60 - 3x + 2\pi k$

$\boxed{x = -\frac{\pi}{24} + \frac{\pi k}{4}}$

$5x = \pi + 60 + 3x + 2\pi k$

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