

2.30
1

$$2 \cos 3x \cdot \sin 6x - \sin 4x \cos 8x = \sin 8x \cos 4x$$

$$2 \cos 3x \sin 6x = \sin 4x \cos 8x + \sin 8x \cos 4x$$

$$2 \cos 3x \sin 6x = \sin(4x + 8x)$$

$$2 \cos 3x \sin 6x = \sin 12x$$

$$2 \cos 3x \sin 6x = 2 \sin 6x \cos 6x$$

$$\sin 6x (\cos 3x - \cos 6x) = 0$$

$$\begin{aligned} \downarrow \\ 6x = \pi k \\ \boxed{x = \frac{\pi k}{6}} \end{aligned}$$

$$\begin{aligned} \downarrow \\ \cos 3x = \cos 6x \\ 3x = 6x + 2\pi k \\ x = \frac{2\pi k}{3} \end{aligned}$$

$$\begin{aligned} 3x = -6x + 2\pi k \\ \boxed{x = \frac{2\pi k}{9}} \end{aligned}$$

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