

$$2 \sin \frac{2x-3x}{2} \cos \frac{2x+3x}{2} + 2 \sin \frac{8x-4x}{2} \cos \frac{8x+4x}{2}$$

$$-2 \sin \frac{x}{2} \cos \frac{5x}{2} + 2 \sin \frac{x}{2} \cos \frac{15x}{2}$$

$$-2 \sin \frac{x}{2} \left(-\cos \frac{5x}{2} + \cos \frac{15x}{2} \right)$$

$$-2 \sin \frac{x}{2} \left(\cos \frac{5x}{2} - \cos \frac{15x}{2} \right)$$

$$-2 \sin \frac{x}{2} = 0 \quad | \quad \cos \frac{5x}{2} - \cos \frac{15x}{2}$$

$$\sin \frac{x}{2} = 0 \quad | \quad -2 \sin \frac{\frac{5x}{2} + \frac{15x}{2}}{2} \sin \frac{\frac{5x}{2} - \frac{15x}{2}}{2}$$

$$\frac{x}{2} = \pi n, n \in \mathbb{Z} \quad | \quad 2 \sin \frac{5x}{2} \sin 5x$$

$$x = 2\pi n, n \in \mathbb{Z} \quad | \quad \sin \frac{5x}{2} = 0 \quad | \quad \sin 5x = 0$$

$$\frac{5x}{2} = \pi n \quad | \quad 5x = \pi n, n \in \mathbb{Z}$$

$$x = \frac{2\pi n}{5}, n \in \mathbb{Z} \quad | \quad x = \frac{\pi n}{5}, n \in \mathbb{Z}$$