

$$\sin 5x \cdot \cos 3x = \sin 6x \cdot \cos 2x$$

$$\frac{1}{2}(\sin 8x + \sin 2x) = \frac{1}{2}(\sin 8x + \sin 4x)$$

$$\sin 2x = \sin 4x$$

$$\sin 2x - 2 \sin 2x \cdot \cos 2x = 0$$

$$\sin 2x - 2 \sin 2x \cdot \cos 2x = 0$$

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

$$\sin 2x = 0$$

$$2x = Pk$$

$$x = Pk/2$$

$$\cos 2x = \frac{1}{2}$$

$$x = P/6 + Pk$$

$$x = 5P/6 + Pk$$

$$\cos^2 x + \cos^2 2x - \cos^2 3x - \cos^2 4x = 0$$

$$(1 + \cos 2x)/2 + (1 + \cos 4x)/2 - (1 + \cos 6x)/2 - (1 + \cos 8x)/2 = 0$$

$$\cos 2x - \cos 8x + \cos 4x - \cos 6x = 0$$

$$2 \sin(5x) \cdot \sin(-x) - 2 \sin(5x) \cdot \sin(-3x) = 0$$

$$2 \sin(5x)(\sin 3x - \sin x) = 0$$

$$2 \sin 5x = 0$$

$$5x = Pk$$

$$x = Pk/5$$

$$\sin 3x - \sin x = 0$$

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

$$\cos 2x = 0$$

$$x = P/4 + Pk/2$$

$$\sin x = 0$$

$$x = Pk$$