

$$\sin^4 x + \cos^4 x = \sin x \cos x$$

$$\left(\frac{1-\cos 2x}{2}\right)^2 + \left(\frac{1+\cos 2x}{2}\right)^2 = \sin x \cos x$$

$$\frac{1}{4} - \frac{\cos 2x}{2} + \frac{\cos^2 2x}{4} + \frac{1}{4} + \frac{\cos 2x}{2} + \frac{\cos^2 2x}{4} = \sin x \cos x$$

$$\frac{1}{2} + 2\frac{\cos^2 2x}{4} = \sin x \cos x$$

$$1 + \cos^2 2x = 2\sin x \cos x$$

$$1 + \cos^2 2x = \sin 2x$$

$$1 + 1 - \sin^2 2x = \sin 2x$$

$$\sin 2x = t$$

$$2 - t^2 = t$$

$$t^2 + t - 2 = 0$$

$$x_1 = -2$$

$$x_2 = 1$$

$$\sin 2x = -2 \text{ - no answer}$$

$$\sin 2x = 1$$

$$2x = \frac{\pi}{2} + 2pk$$

$$x = \frac{\pi}{4} + pk$$