

$$2\sin x \cdot \cos^2 x + \cos^4 x = 2\sin x + \cos 2x + \cos^2 x$$

$$2\sin x \cdot \cos^2 x + \cos^4 x + \sin^2 x - \sin^2 x = 2\sin x + \cos 2x + \cos^2 x$$

$$(\cos^2 x + \sin x)^2 = 2\sin x + \cos 2x + \cos^2 x + \sin^2 x$$

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

$$(\cos^2 x + \sin x)^2 = 2\sin x + 2\cos^2 x$$

$$(\cos^2 x + \sin x)^2 = 2(\sin x + \cos^2 x)$$

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

$$y^2 - 2y = 0$$

$$y(y - 2) = 0$$

$$y = 0 \quad y = 2$$

$$\sin x + \cos^2 x = 0$$

$$\sin x - \sin^2 x + 1 = 0$$

$$\sin x = z$$

$$z^2 - z - 1 = 0$$

$$D = 5$$

$$z_1 = (1 + \sqrt{5})/2$$

$$z_2 = (1 - \sqrt{5})/2$$

$$\sin x = (1 + \sqrt{5})/2$$

Кор нет

$$\sin x = (1 - \sqrt{5})/2$$

$$x = \arcsin((1 - \sqrt{5})/2) + Pk$$

$$x = P - \arcsin((1 - \sqrt{5})/2) + Pk$$

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

$$\sin x - \sin^2 x - 1 = 0$$

$$\sin x = z$$

$$z^2 - z + 1 = 0$$

$$D < 0$$

Корней нет

Ответ: $\arcsin((1 - \sqrt{5})/2) + Pk$; $P - \arcsin((1 - \sqrt{5})/2) + Pk$

