

A, B, C = числа u, v переменные  
 $Au^2 + Bu^1v^1 + Cv^2 = 0 \quad | :v^2$

$$Au^2/v^2 + Bu^1/v^1 + C = 0$$

$$At^2 + Bt + C = 0$$

$$\sin^2 x - \sqrt{2}\cos(2x - \pi/4) = 1$$

$$\sin^2 x - \sqrt{2}(\cos 2x \cdot \sqrt{2}/2 + \sin 2x \cdot \sqrt{2}/2) = 1$$

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

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

$$\sin^2 x - 2\cos^2 x + 2\sin x \cdot \cos x = 0 \quad | : \cos^2 x$$

$$\sin^2 2x / \cos^2 2x - 2 \cos^2 2x / \cos^2 2x + 2\sin x \cdot \cos x / \cos^2 2x = 0$$

$$\sin x / \cos x = t$$

$$\cos x \neq 0$$

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

$$D = 1 + 2 = 3$$

$$t_{1,2} = -1 \pm \sqrt{3}$$

$$\operatorname{tg} x = -1 \pm \sqrt{3}$$

$$x = \operatorname{arctg}(-1 \pm \sqrt{3}) + \pi k$$

$$\sin^3 3x - 4\sin^2 3x \cos 3x + 3\sin 3x \cos^2 3x = 0 \quad | : \sin^3 3x$$

$$\sin^3 3x / \sin^3 3x - 4\sin^2 3x \cos 3x / \sin^3 3x + 93\sin 3x \cos^2 3x / \sin^3 3x = 0$$

$$1 - 4\cos 3x / \sin 3x + 3(\cos 3x / \sin 3x)^2 = 0$$

$$\cos 3x / \sin 3x = t$$

$$1 - 4t + 3t^2 = 0$$

$$3t^2 - 4t + 1 = 0$$

$$t = 1$$

$$t = 1/3$$

$$\operatorname{tg} 3x = 1$$

$$3x = \pi/4 + \pi k$$

$$x = \pi/12 + \pi k/3$$

$$\operatorname{tg} 3x = 1/3$$

$$3x = \operatorname{arctg} 1/3 + \pi k$$

$$x = (\operatorname{arctg} 1/3)/3 + \pi k/3$$

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$$(2\sin x \cos x - \cos^2 x) / (2\cos x - \sin x) = 0$$

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

$$(2\cos x - \sin x) \neq 0$$

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

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

$$\cos x = 0$$

$$x = \pi/2 + \pi k$$

$$2\sin x - \cos x = 0 \quad | : \cos x$$

$$\operatorname{tg} x = 1/2$$

$$x = \operatorname{arctg} 1/2 + \pi k$$

$$2\cos x - \sin x \neq 0$$

$$\text{Пусть } 2\cos x - \sin x = 0 \Rightarrow \sin x = 2\cos x$$

$$\text{в } 2\sin x \cos x - \cos^2 x = 0 \text{ подставим}$$

$$\text{получится } 3\cos^2 x = 0 \Rightarrow \cos x = 0 \text{ а отсюда } \sin x = 2\cos x \quad \sin x = 0 \text{ ---- невозможное}$$