

$$5+2\sin 2x - 5\cos x = 5\sin x$$

$$5+4\sin x\cos x-5\cos x=5\sin x$$

$$4\sin x\cos x-5\cos x-5\sin x=-5$$

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

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

$$t=\cos x+\sin x$$

$$2t^2+3-5t=0$$

$$2t^2-5t+3=0$$

$$D=25-24=1$$

$$x_1=(5-1)/4=1$$

$$x_2=(5+1)/4=3/2=1.5$$

$$\cos x+\sin x=3/2$$

$$\sqrt{2}(\sin(x+\pi/4))=3/2$$

$$\sin(x+\pi/4)=3/2/\sqrt{2}=3/2\sqrt{2}-\text{lie}$$

$$\sqrt{2}(\sin(x+\pi/4))=1$$

$$\sin(x+\pi/4)=1/\sqrt{2}$$

$$x+\pi/4=\pi/4+2\pi k$$

$$x+\pi/4=3\pi/4+2\pi k$$

$$x=2\pi k$$

$$x=2\pi/4+2\pi k$$

$$a\sin x+b\cos x=\sqrt{a^2+b^2}(a/\sqrt{a^2+b^2}\sin x+b/\sqrt{a^2+b^2}\cos x)=$$

$$=\sqrt{a^2+b^2}(\cos y\sin x+\sin y\cos x)=\sqrt{a^2+b^2}(\sin(x+y))=$$

$$\cos y=a/\sqrt{a^2+b^2}$$

$$\sin y=b/\sqrt{a^2+b^2}$$

$$1\sin x+1\cos x=\sqrt{2}(\sin(x+\pi/4))=3/2$$

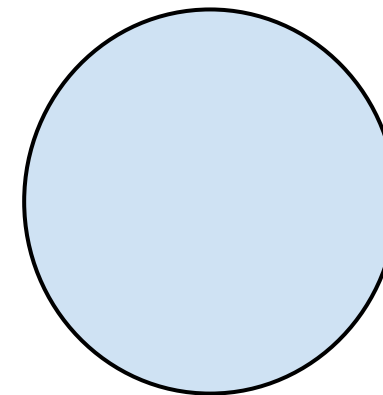
$$\cos y=1/\sqrt{2}$$

$$\sin y=1/\sqrt{2}$$

$$y=\pi/4$$

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

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



Ответ  $x=2\pi k$

$x=2\pi/4+2\pi k$