https://znanija.com/task/28433554

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

$\sqrt{3}\cdot\sin x+\sin 2x=2\sin\left(x-\frac{\pi}{2}\right)-\sqrt{3}$

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

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

3. $\sqrt{3}\cdot\sin x+2\sin x\cdot\cos x+2\cos x+\sqrt{3}=0$

$\left(\sqrt{3}\cdot\sin x+\sqrt{3}\right)+\left(2\sin x\cdot\cos x+2\cos x\right)=0$

$\sqrt{3}\cdot\left(\sin x+1\right)+2\cos x\cdot\left(\sin x+1\right)=0$

$\left(\sqrt{3}+2\cos x\right)\cdot\left(\sin x+1\right)=0$

$\sqrt{3}+2\cos x=0$ *или* $\sin x+1=0$

1. $\sqrt{3}+2\cos x=0.\quad \cos x=-\frac{\sqrt{3}}{2}.\quad x=\pm\arccos\left(-\frac{\sqrt{3}}{2}\right)+2\pi n,\ n\in Z$

$x=\pm\left(\pi-\arccos\frac{\sqrt{3}}{2}\right)+2\pi n,\ n\in Z,\quad x=\pm\left(\pi-\frac{\pi}{6}\right)+2\pi n,\ n\in Z,$

$x=\pm\frac{5\pi}{6}+2\pi n,\ n\in Z$

2. $\sin x+1=0.\quad \sin x=-1,\quad x=-\frac{\pi}{2}+2\pi n,,\ n\in Z$

ответ: $\quad x_1=\pm\frac{5\pi}{6}+2\pi n,\ n\in Z,\quad x_2=-\frac{\pi}{2}+2\pi n,,\ n\in Z$