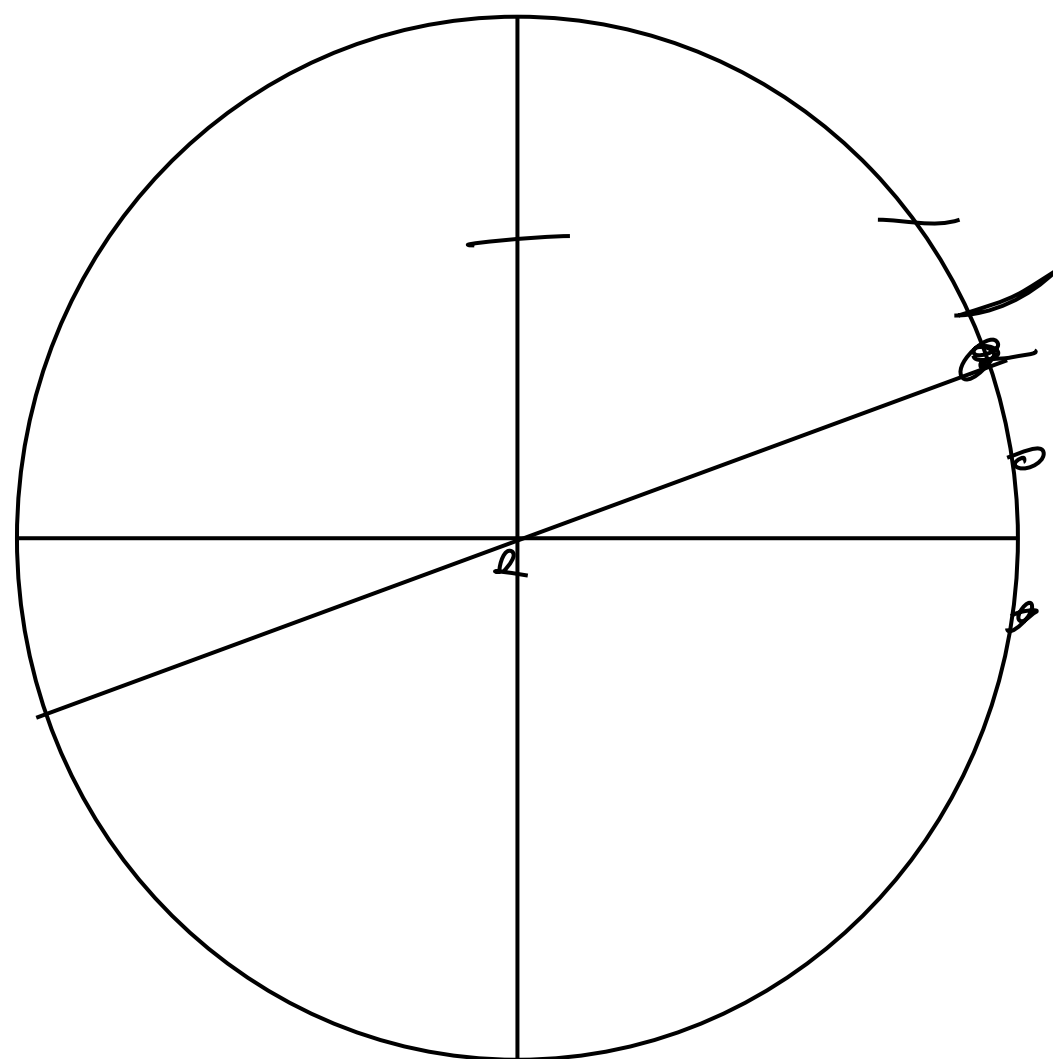


$$\sin 2x + 2\sin x = 1 + \cos x$$

найти решения на промежутке  $[-4; -3]$

$$x = -7\pi/6$$



$$3\cos x + 4\sin x = 5\sin 3x$$

найти решения на промежутке  $[0; \pi/2]$

$$3\cos x + 4\sin x = 5(\sin x \cdot \frac{4}{5} + \cos x \cdot \frac{3}{5}) = 5(\sin(x+t)) = 5\sin(x + \arcsin \frac{3}{5})$$

$$\cos t = \frac{4}{5} \quad t = \arccos \frac{4}{5}$$

$$\sin t = \frac{3}{5} \quad t = \arcsin \frac{3}{5}$$

$$5\sin(x + \arcsin \frac{3}{5}) = 5\sin 3x$$

$$\sin(x + \arcsin \frac{3}{5}) = \sin 3x$$

$$\sin(x + \arcsin \frac{3}{5}) - \sin 3x = 0$$

$$2(\cos(\frac{4x + \arcsin \frac{3}{5}}{2}) \cdot \sin(\frac{-2x + \arcsin \frac{3}{5}}{2})) = 0$$

$$\cos(\frac{4x + \arcsin \frac{3}{5}}{2}) = 0$$

$$\frac{4x + \arcsin \frac{3}{5}}{2} = \frac{\pi}{2} + \pi k$$

$$4x + \arcsin \frac{3}{5} = \pi + 2\pi k$$

$$x = \frac{\pi}{4} + \frac{\pi k}{2} - \frac{\arcsin(\frac{3}{5})}{4}$$

$$\sin(\frac{-2x + \arcsin \frac{3}{5}}{2}) = 0$$

$$\frac{-2x + \arcsin \frac{3}{5}}{2} = \pi k$$

$$-2x + \arcsin \frac{3}{5} = 2\pi k$$

$$2x = \arcsin \frac{3}{5} - 2\pi k$$

$$x = \frac{\arcsin \frac{3}{5}}{2} - \pi k$$

$$x_1 = \frac{\arcsin \frac{3}{5}}{2}$$

$$x_2 = \frac{\pi}{4} - \frac{\arcsin(\frac{3}{5})}{4}$$