

а) Решите уравнение $(6\sin^2 x + 5\sin x - 4) \cdot \sqrt{-7\cos x} = 0$.

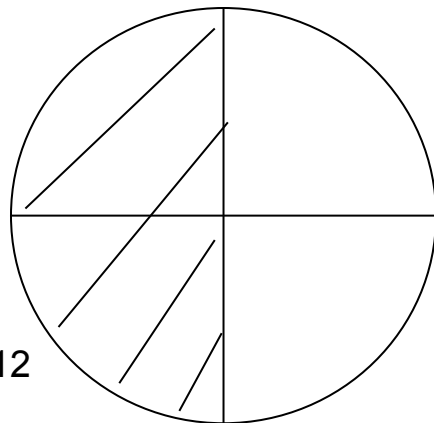
б) Найдите все корни этого уравнения, принадлежащие отрезку $\left[-\frac{5\pi}{4}; \frac{7\pi}{12}\right]$

$$\begin{aligned} (6\sin^2 x + 5\sin x - 4) \cdot \sqrt{-7\cos x} &= 0 \\ (6\sin^2 x + 5\sin x - 4) \cdot \sqrt{-7(1 - \sin^2 x)} &= 0 \\ 6\sin^2 x + 5\sin x - 4 = 0 \quad \sqrt{-7\cos x} &= 0 \\ t = \sin x & \\ 6t^2 + 5t - 4 = 0 & \\ D = 25 + 16 \cdot 6 = 121 & \\ t = \frac{-5 \pm 11}{12} = -\frac{16}{12}; \frac{1}{2} & \\ \sin x = \frac{1}{2} & \\ x = \frac{\pi}{6} + 2\pi k; \frac{5\pi}{6} + 2\pi k & \\ x = \frac{5\pi}{6} + 2\pi k & \end{aligned}$$

$$\begin{aligned} -\frac{5\pi}{4} &\leq \frac{5\pi}{6} + 2\pi k \leq \frac{7\pi}{12} \\ -30\pi &\leq 20\pi + 48\pi k \leq 14\pi \\ -50 &\leq 48k \leq -6 \\ -1, \dots &\leq k \leq -\frac{1}{8} \end{aligned}$$

$$\begin{aligned} (6\sin^2 x + 5\sin x - 4) &= 0 \\ \text{при условии что вторая} & \\ \text{существует} & \\ -7\cos x &\geq 0 \\ \text{или} & \\ \sqrt{-7\cos x} &= 0 \\ \cos x = 0 & \\ x = \frac{\pi}{2} + \pi k & \\ -\frac{5\pi}{4} \leq \frac{\pi}{2} + \pi k \leq \frac{7\pi}{12} & \\ -\frac{5\pi}{2} \leq \pi + 2\pi k \leq \frac{7\pi}{6} & \\ -\frac{5}{2} \leq 1 + 2k \leq \frac{7}{6} & \\ -\frac{5}{2} - 1 \leq 2k \leq \frac{7}{6} - 1 & \\ k = -1; 0 & \\ x = \frac{\pi}{2}; -\frac{\pi}{2} & \end{aligned}$$

$$\cos x \leq 0$$



а) $\frac{5\pi}{6} + 2\pi k; \frac{\pi}{2}$
 б) $-\frac{7\pi}{6}; -\frac{\pi}{2}; \frac{\pi}{6}$