

$$1) (\sin 2x + \sin \frac{\pi}{6}) (\sin 2x - 3) = 0$$

$$[0; \pi]$$

$$\sin 2x + \sin \frac{\pi}{6} = 0 \quad \text{или} \quad \sin 2x - 3 = 0$$

$$\sin 2x + \frac{1}{2} = 0$$

$$\sin 2x = 3$$

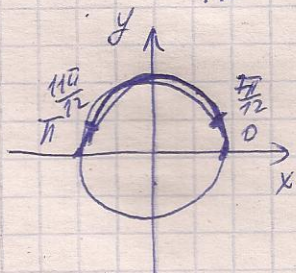
нет корней, т.к.

$$|\sin 2x| \leq 1.$$

$$\sin 2x = -\frac{1}{2}$$

$$2x = (-1)^{k+1} \frac{\pi}{6} + \pi k; k \in \mathbb{Z}$$

$$x = (-1)^{k+1} \frac{\pi}{12} + \frac{\pi k}{2}; k \in \mathbb{Z}.$$



Ответ: $x = (-1)^{k+1} \frac{\pi}{12} + \frac{\pi k}{2}$
 $k \in \mathbb{Z}.$

$$\frac{11\pi}{12} \text{ и } \frac{7\pi}{12}$$

$$2) (\cos 2x + \cos \frac{\pi}{4}) (\cos 2x + 4) = 0.$$

$$\cos 2x + \cos \frac{\pi}{4} = 0 \quad \text{или}$$

$$\cos 2x + 4 = 0$$

$$\cos 2x = -\frac{\sqrt{2}}{2}$$

$$\cos 2x = -4$$

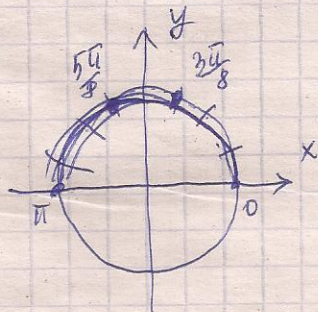
нет корней, т.к.

$$|\cos 2x| \leq 1$$

$$2x = \pm \frac{3\pi}{4} + 2\pi k; k \in \mathbb{Z}$$

$$x = \pm \frac{3\pi}{8} + \pi k; k \in \mathbb{Z}.$$

$$\frac{3\pi}{8}, \frac{5\pi}{8}$$



Ответ: $x = \pm \frac{3\pi}{8} + \pi k.$

$$\frac{3\pi}{8} \text{ и } \frac{5\pi}{8}$$