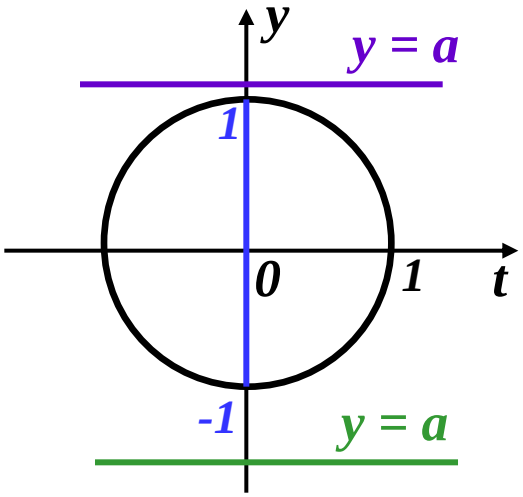
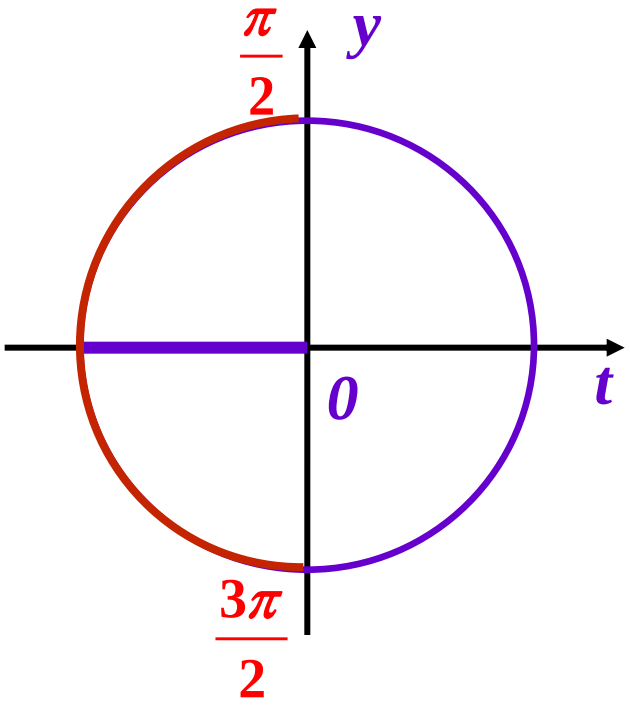
Решение тригонометрических неравенств

$\sin x < a$



Если $a > 1$, то $x \in R$

Если $a <- 1$, то решений нет



$$\cos^2 x < \frac{1}{2} \quad \Big| \cdot 2$$

$$2\cos^2 x < 1,$$

$$1 + \cos 2x < 1,$$

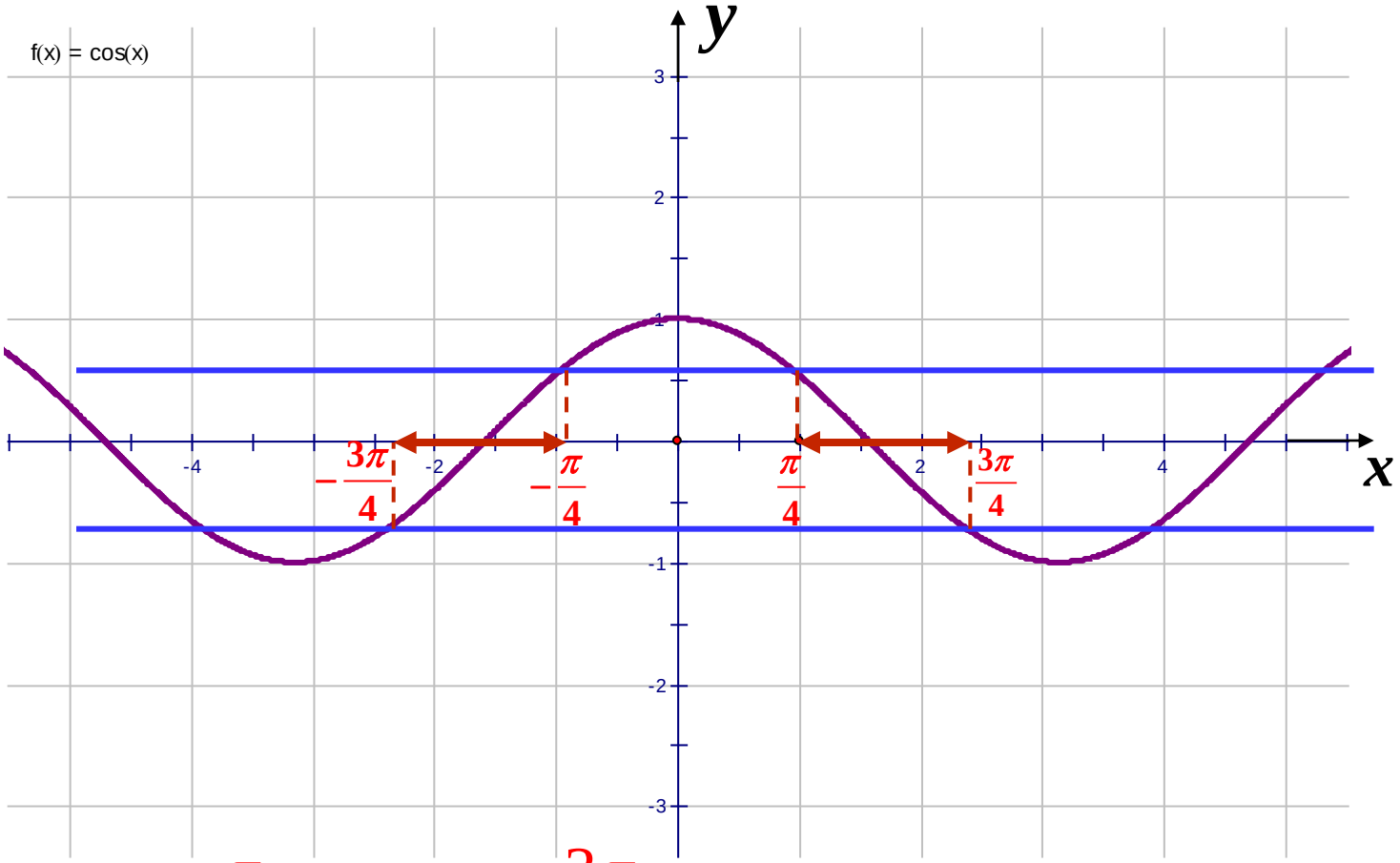
$$\cos 2x < 0,$$

$$\frac{\pi}{2} + 2\pi k < 2x < \frac{3\pi}{2} + 2\pi k,$$

$$\frac{\pi}{4} + \pi k < x < \frac{3\pi}{4} + \pi k,$$

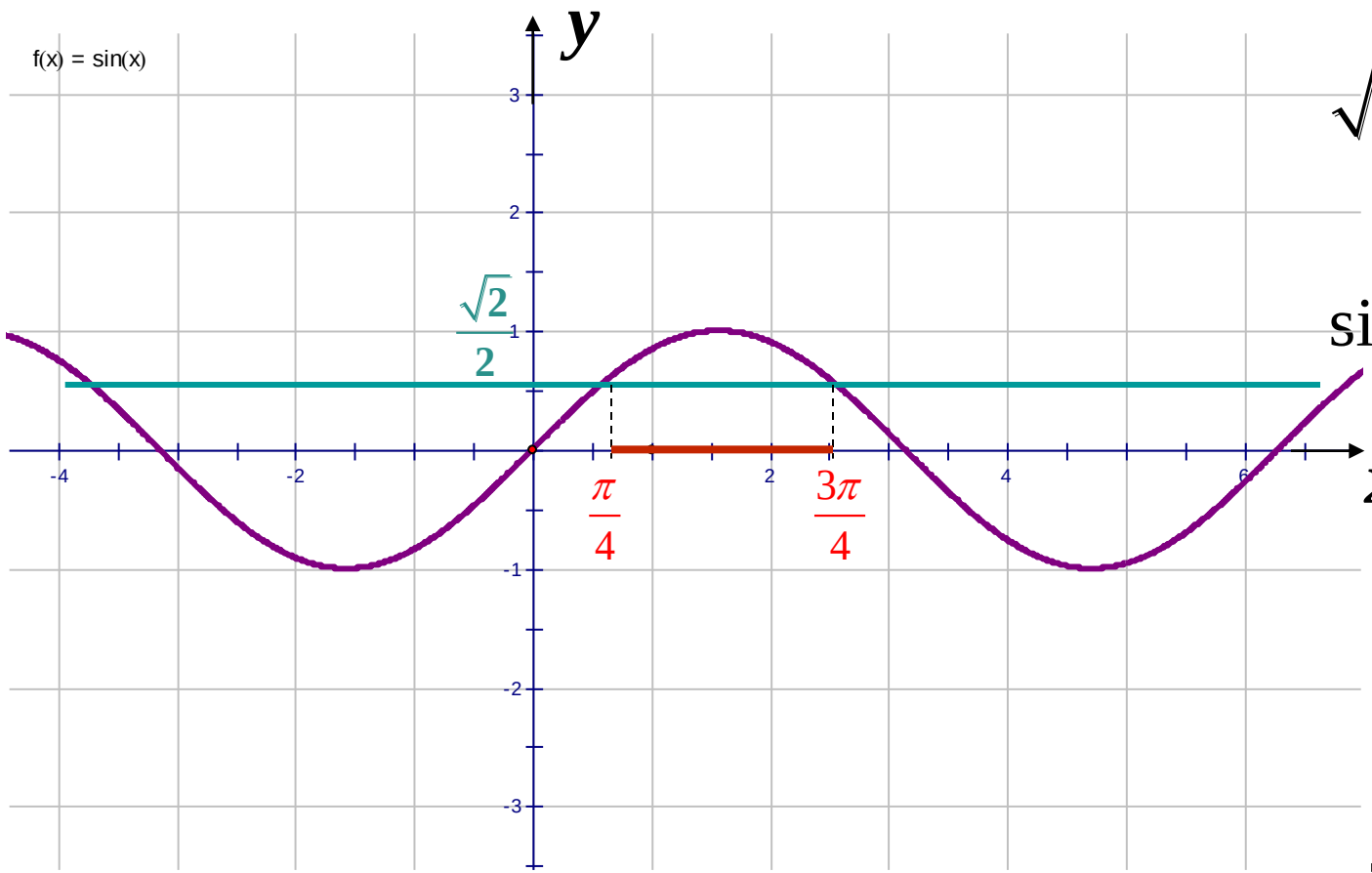
$$\cos^2 x < \frac{1}{2}$$

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



$$\frac{\pi}{4} + \pi k < x < \frac{3\pi}{4} + \pi k,\ k \in Z$$

$$\cos x - \sin x \geq 1$$



$$\sqrt{2}\sin\left(\frac{\pi}{4} - x\right) \geq 1;$$

$$\sin\left(\frac{\pi}{4} - x\right) \geq \frac{\sqrt{2}}{2}$$

$$\frac{\pi}{4} + 2\pi n \leq \frac{\pi}{4} - x \leq \frac{3\pi}{4} + 2\pi n,\ n \in Z$$

$$-\frac{\pi}{2} - 2\pi n \leq x \leq -2\pi n$$