Функция y=sinx, её свойства и график

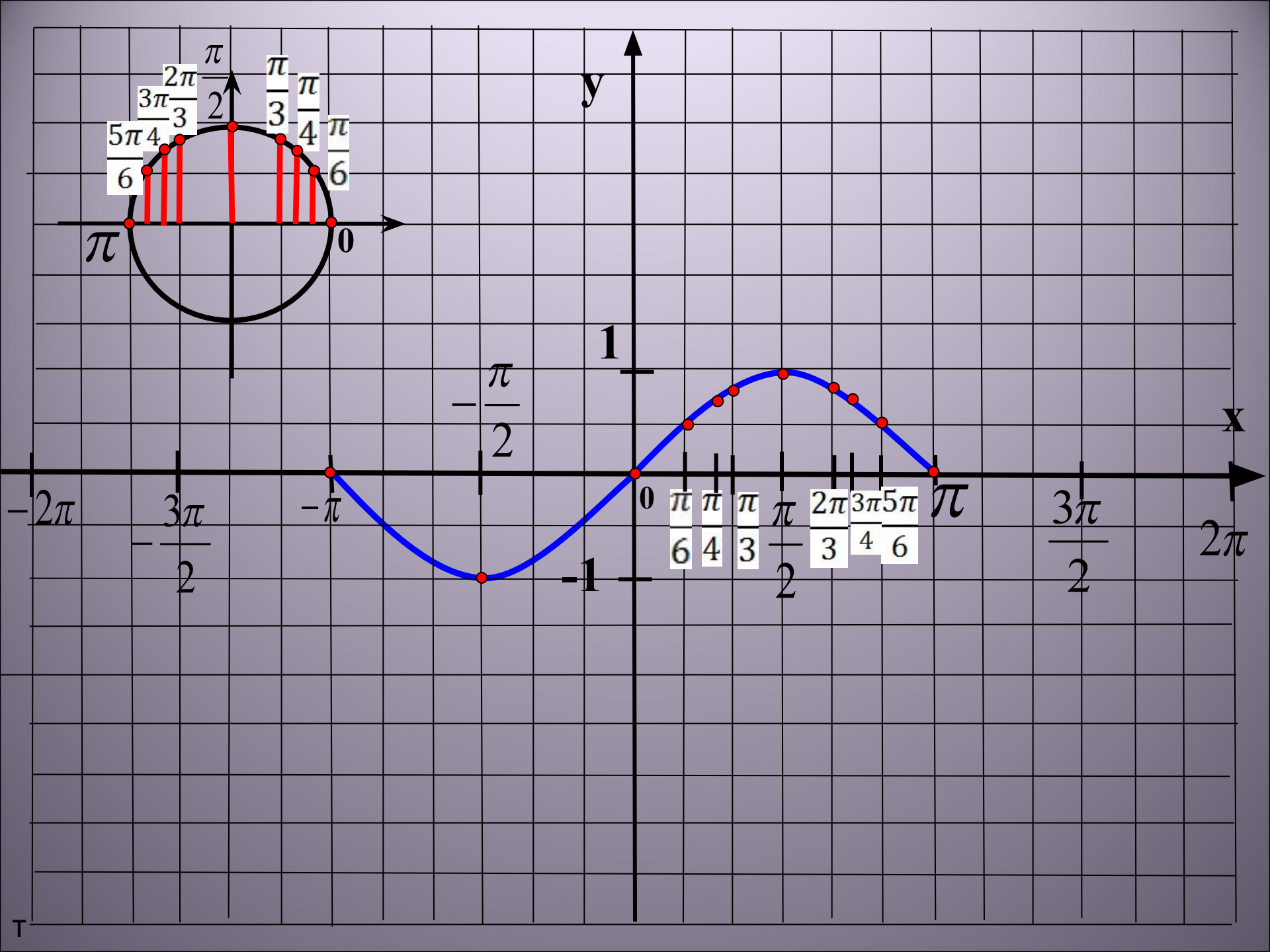
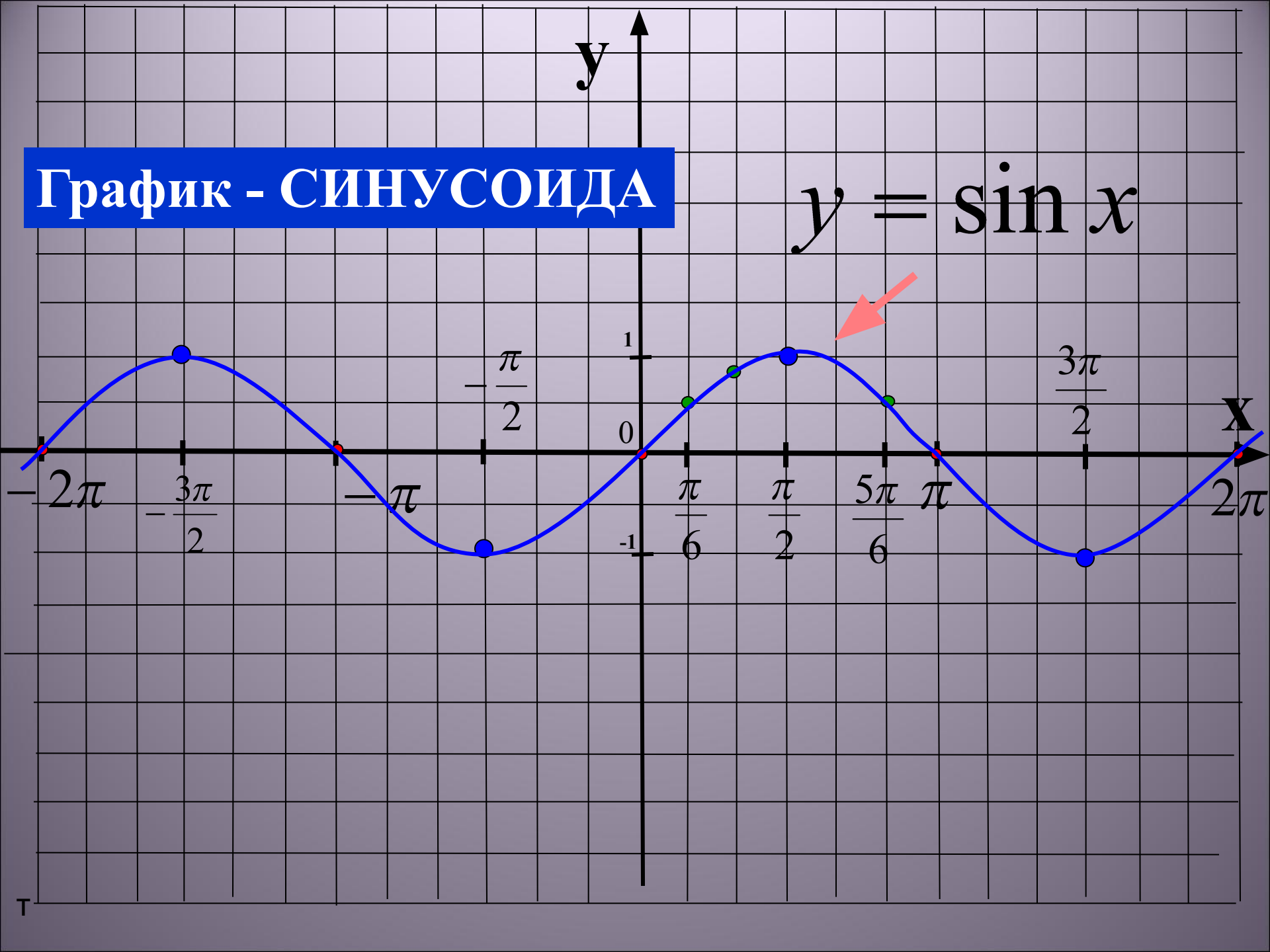
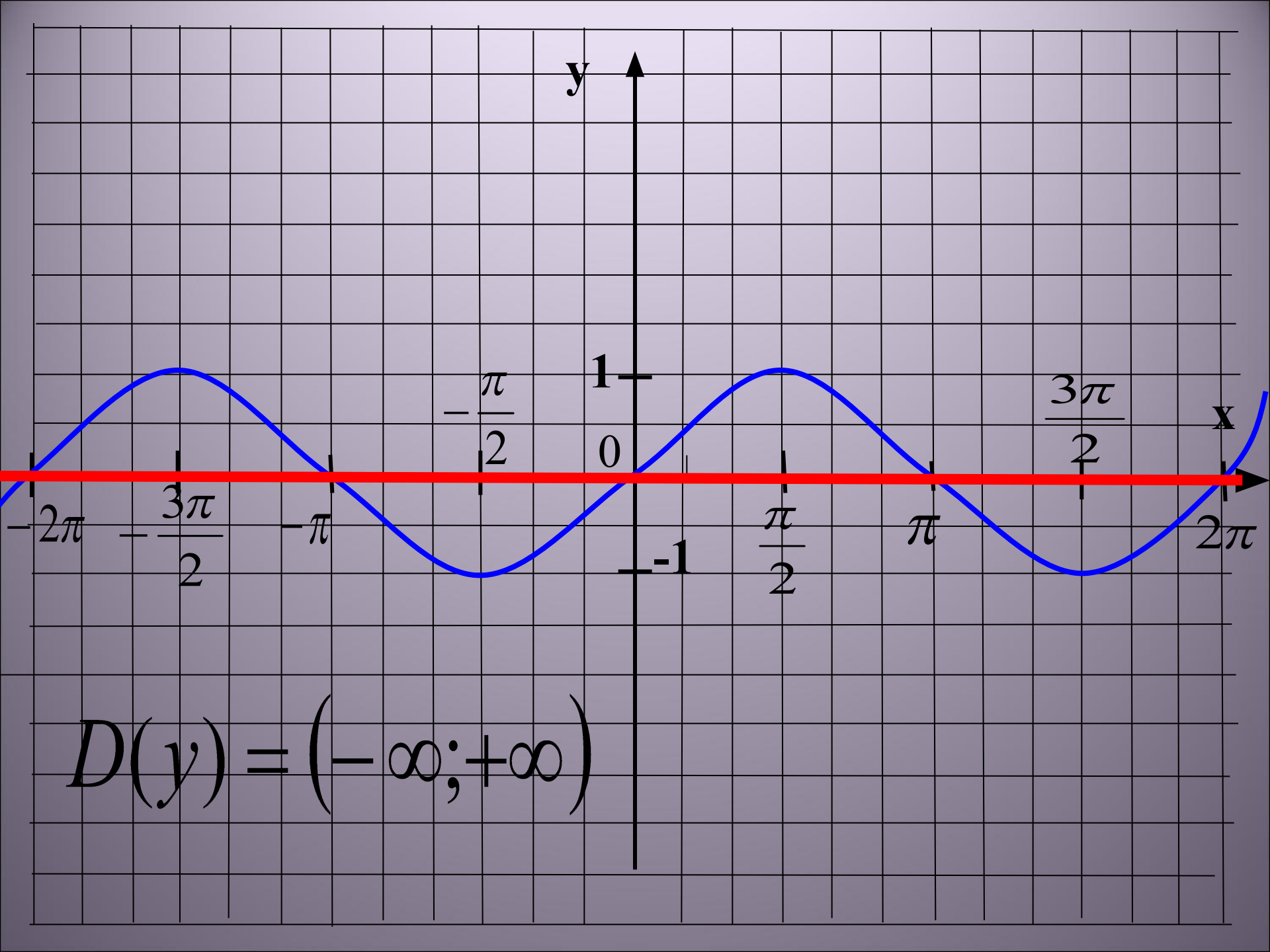

y
x
1
-1
0
-2π
$-\frac{3\pi}{2}$
$-\pi$
$-\frac{\pi}{2}$
$\frac{\pi}{6}$
$\frac{\pi}{4}$
$\frac{\pi}{3}$
$\frac{\pi}{2}$
$\frac{2\pi}{3}$
$\frac{3\pi}{4}$
$\frac{5\pi}{6}$
π
$\frac{3\pi}{2}$
2π
$\frac{\pi}{2}$
$\frac{2\pi}{3}$
$\frac{3\pi}{4}$
$\frac{\pi}{3}$
$\frac{\pi}{4}$
$\frac{5\pi}{6}$
$\frac{\pi}{6}$
π
0

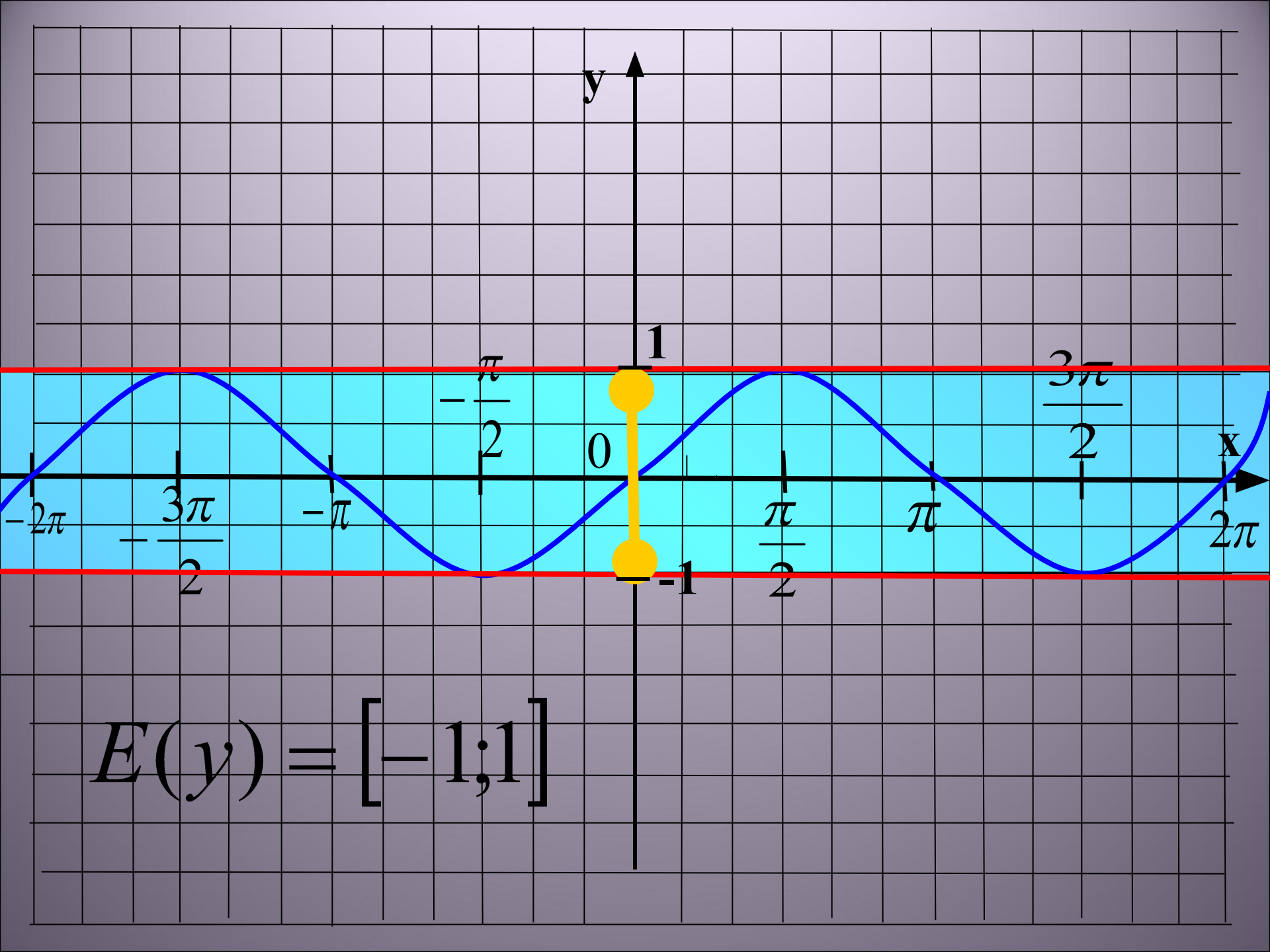
График - СИНУСОИДА

$y = \sin x$



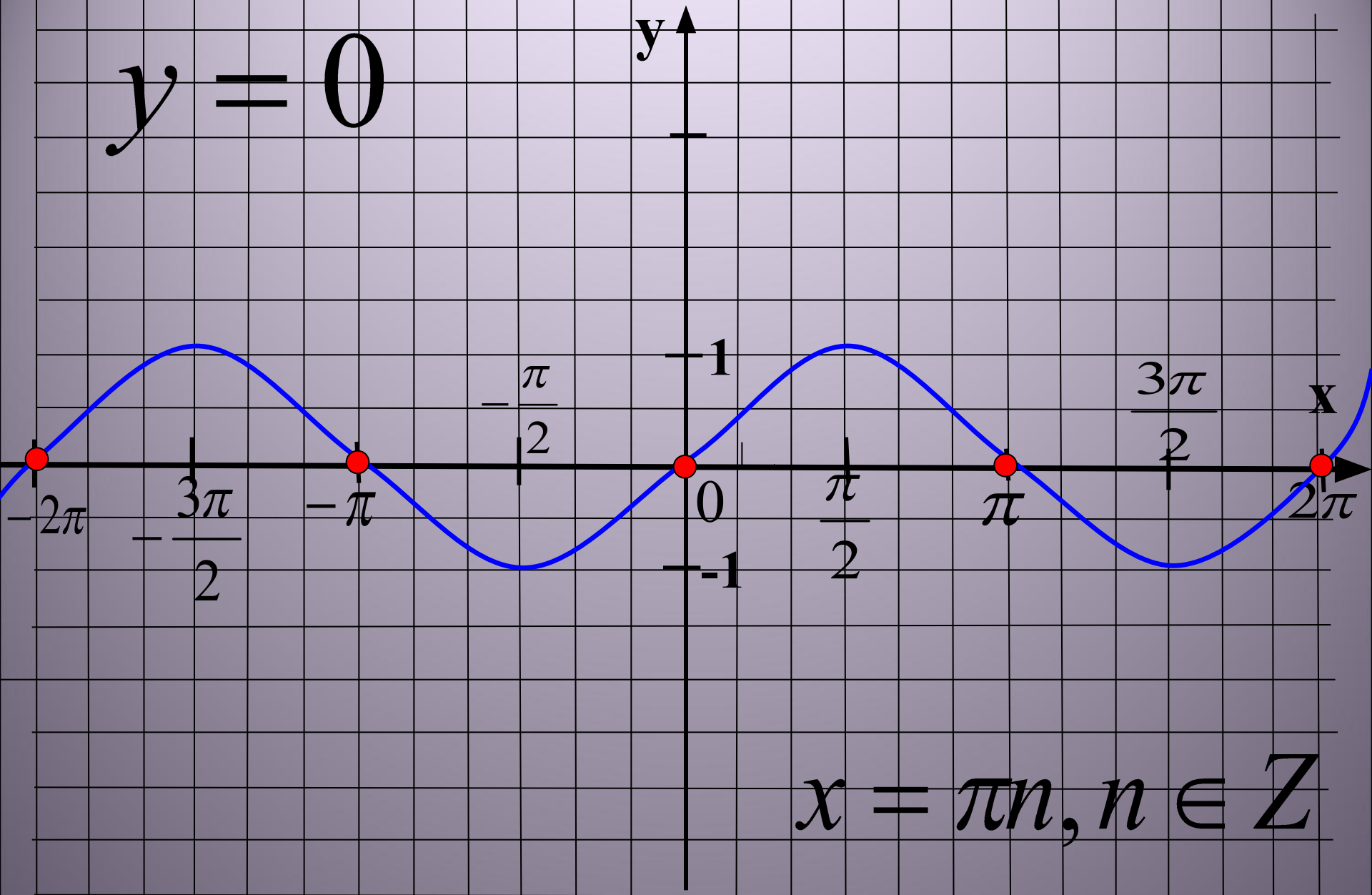


$$D(y) = (-\infty; +\infty)$$



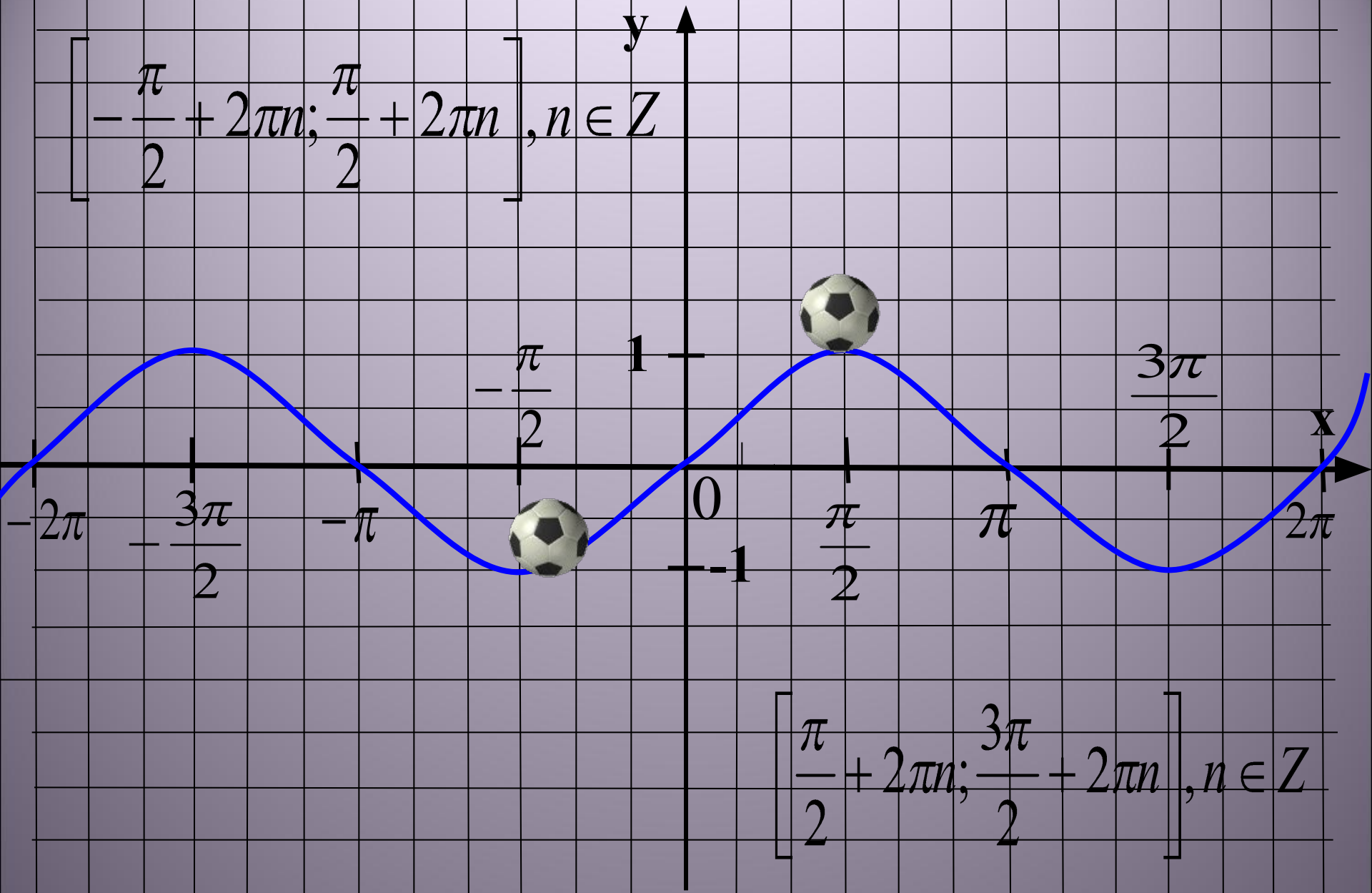
$$E(y) = [-1;1]$$

$y = 0$

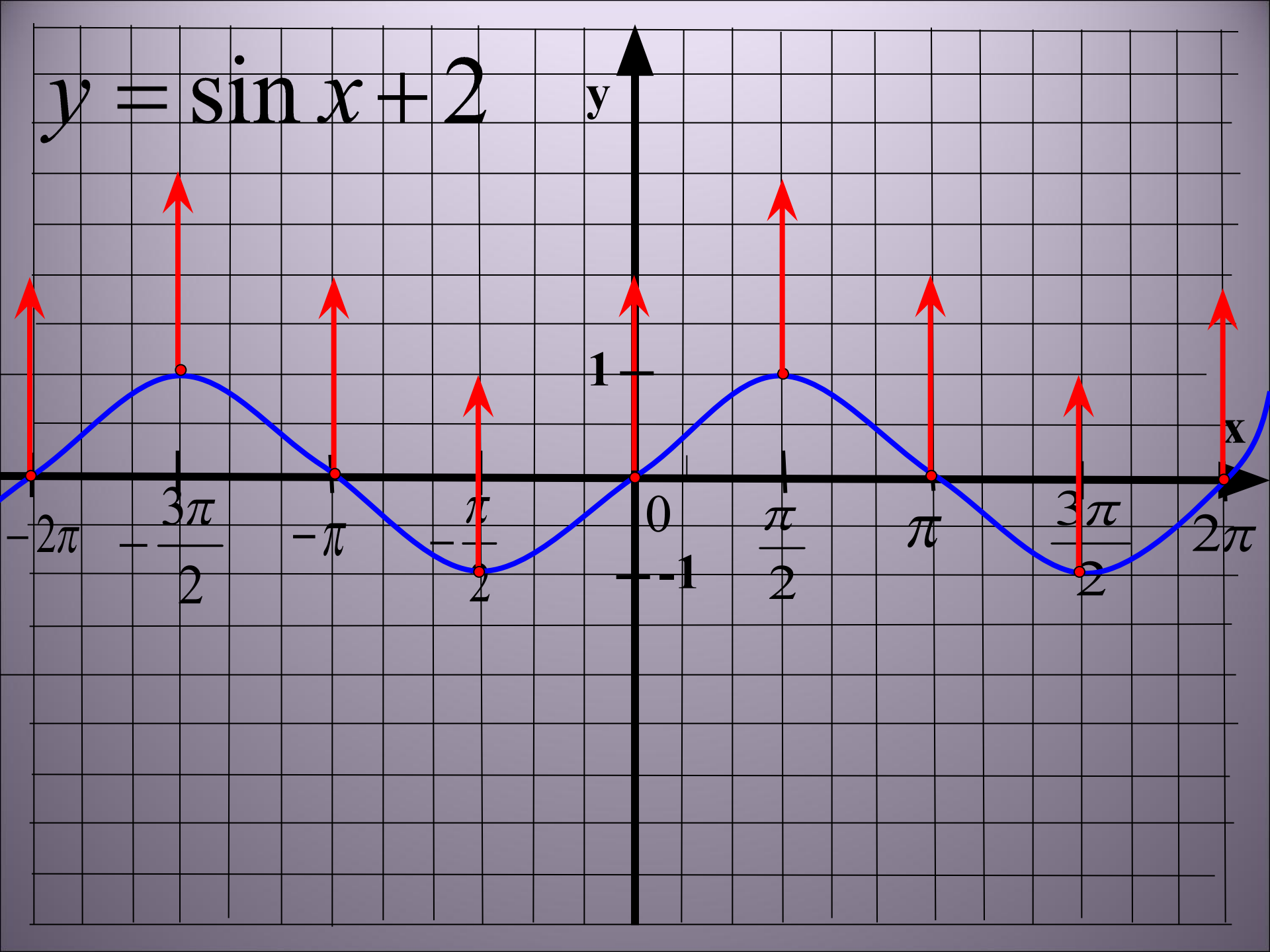


$x = \pi n, n \in Z$

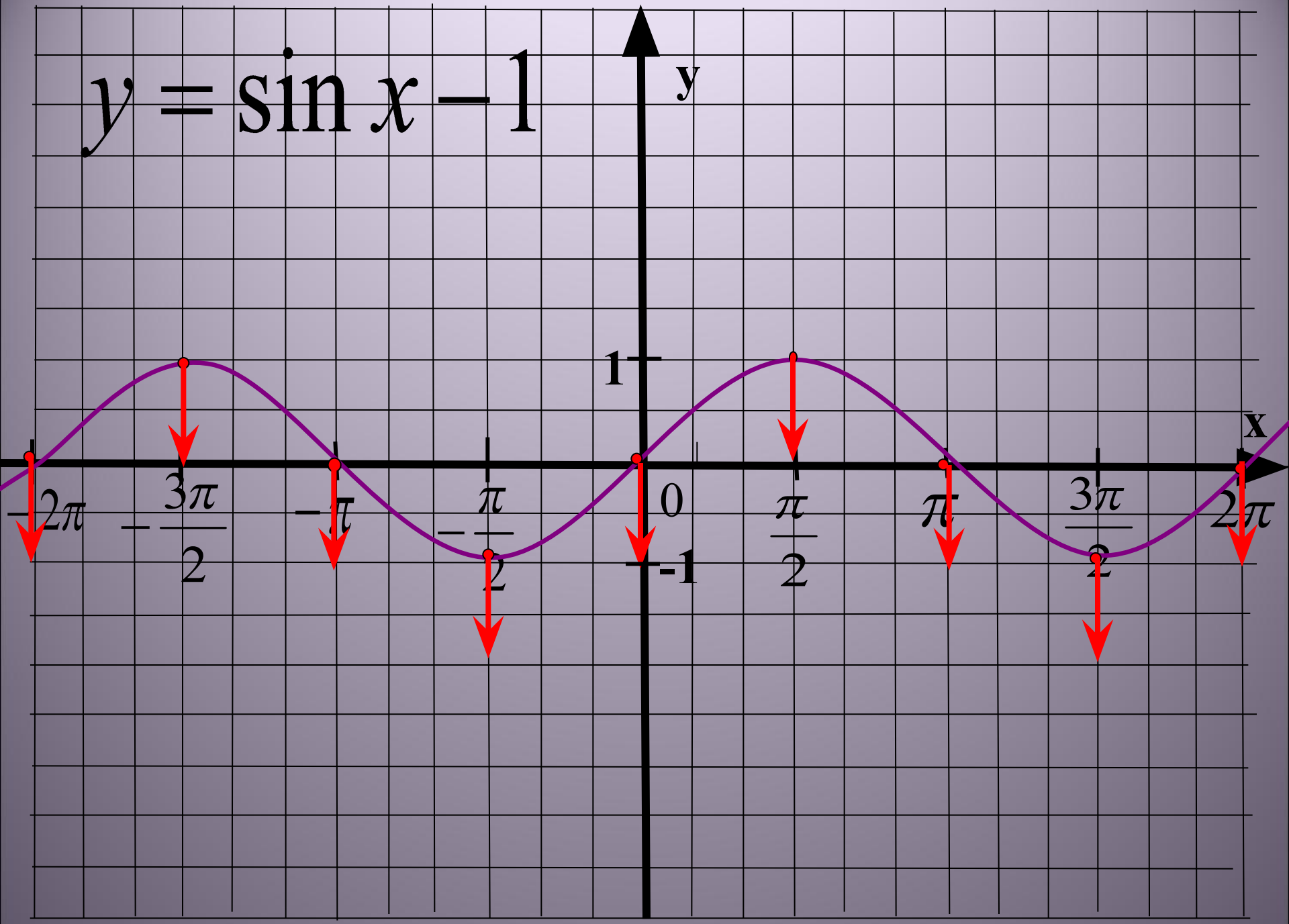
$$\left[-\frac{\pi}{2}+2\pi n;\frac{\pi}{2}+2\pi n\right], n\in Z$$



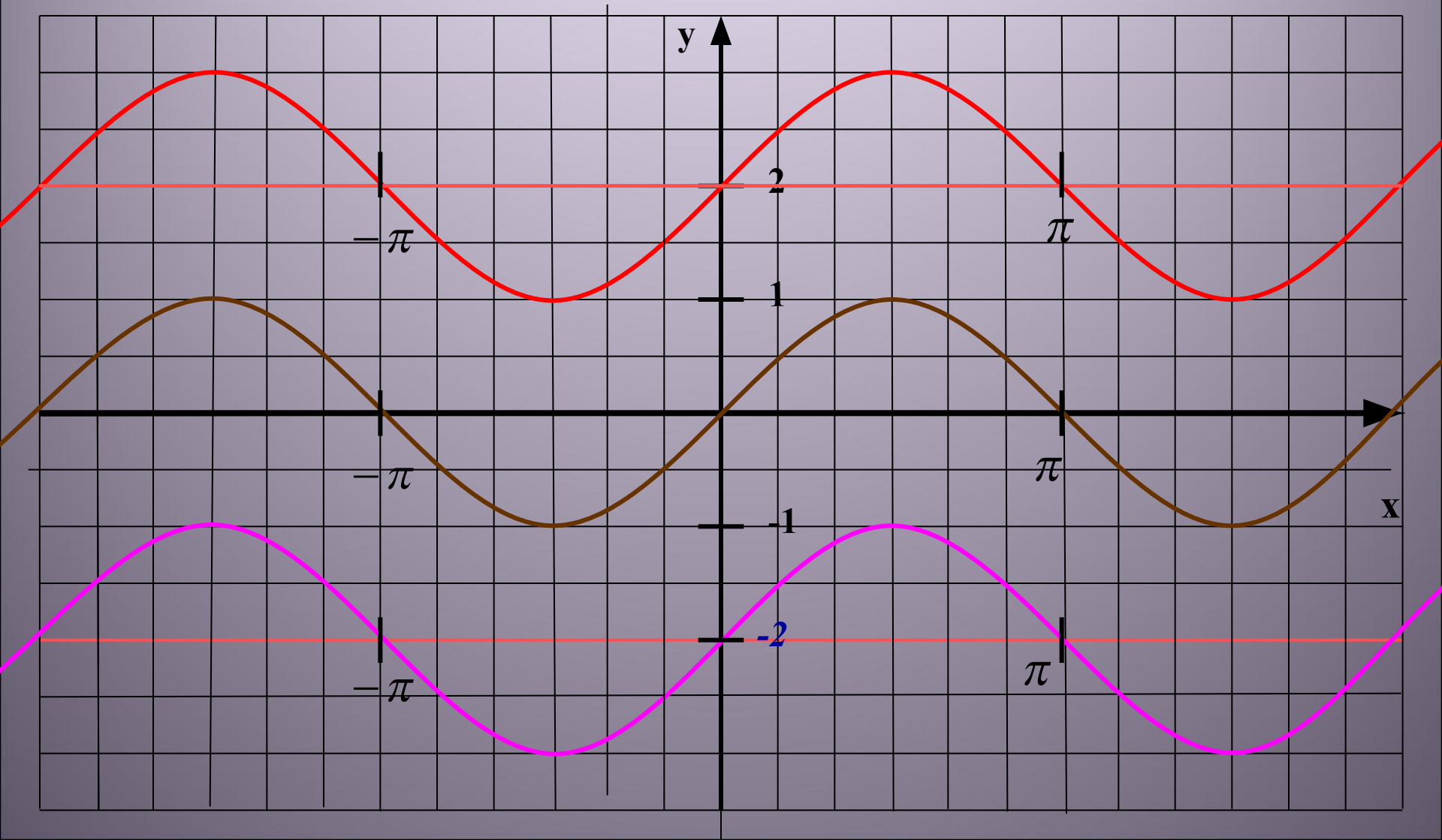
$$\left[\frac{\pi}{2}+2\pi n;\frac{3\pi}{2}+2\pi n\right], n\in Z$$


$y = \sin x + 2$
y
x
1
0
-1
-2π
$-\frac{3\pi}{2}$
$-\pi$
$-\frac{\pi}{2}$
$\frac{\pi}{2}$
π
$\frac{3\pi}{2}$
2π

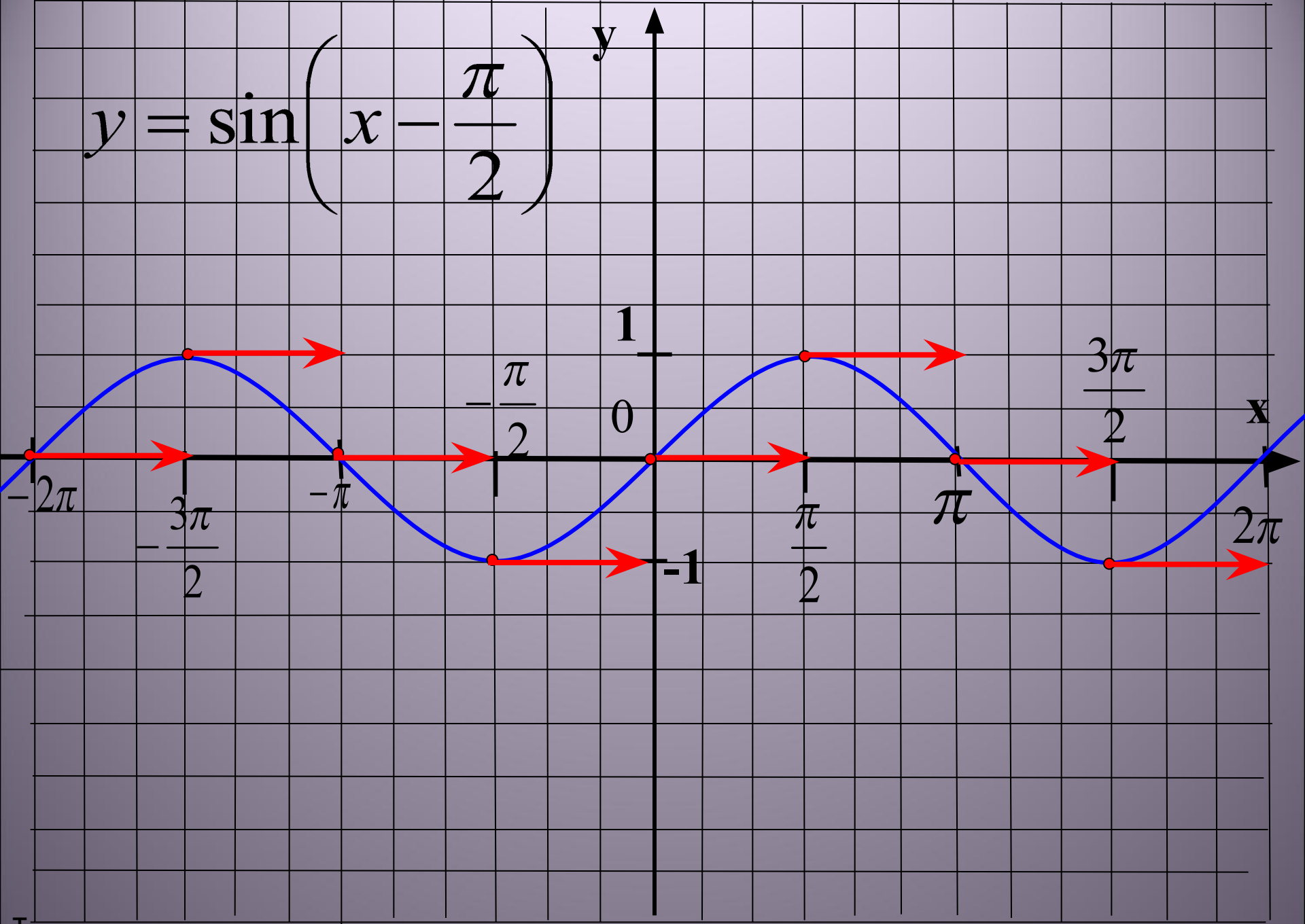
$y = \sin x - 1$



Проверка: $y_1 = \sin x$; $y_2 = \sin x + 2$; $y_3 = \sin x - 2$.

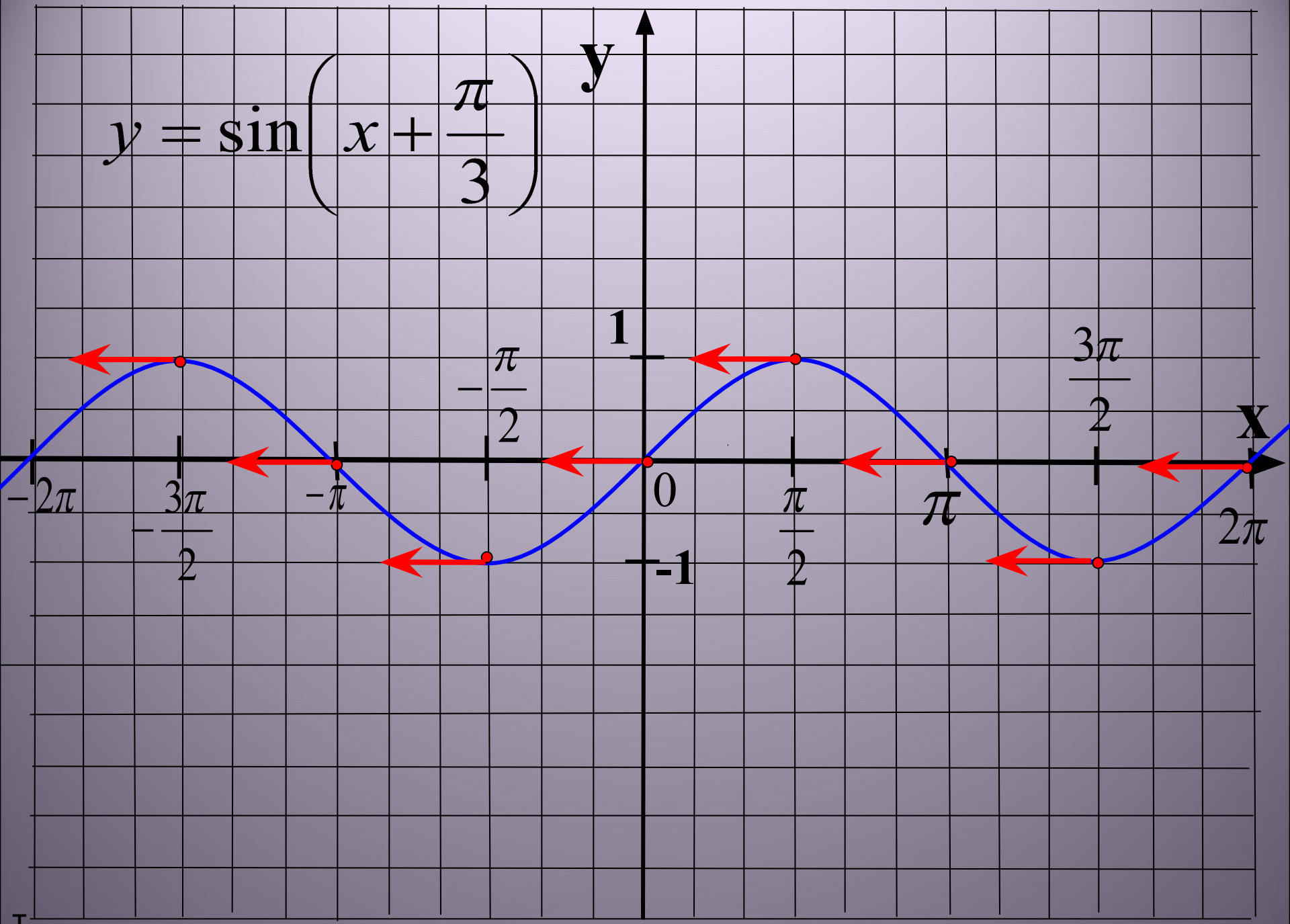


$$y = \sin\left(x - \frac{\pi}{2}\right)$$



T

$$y = \sin\left(x + \frac{\pi}{3}\right)$$



T

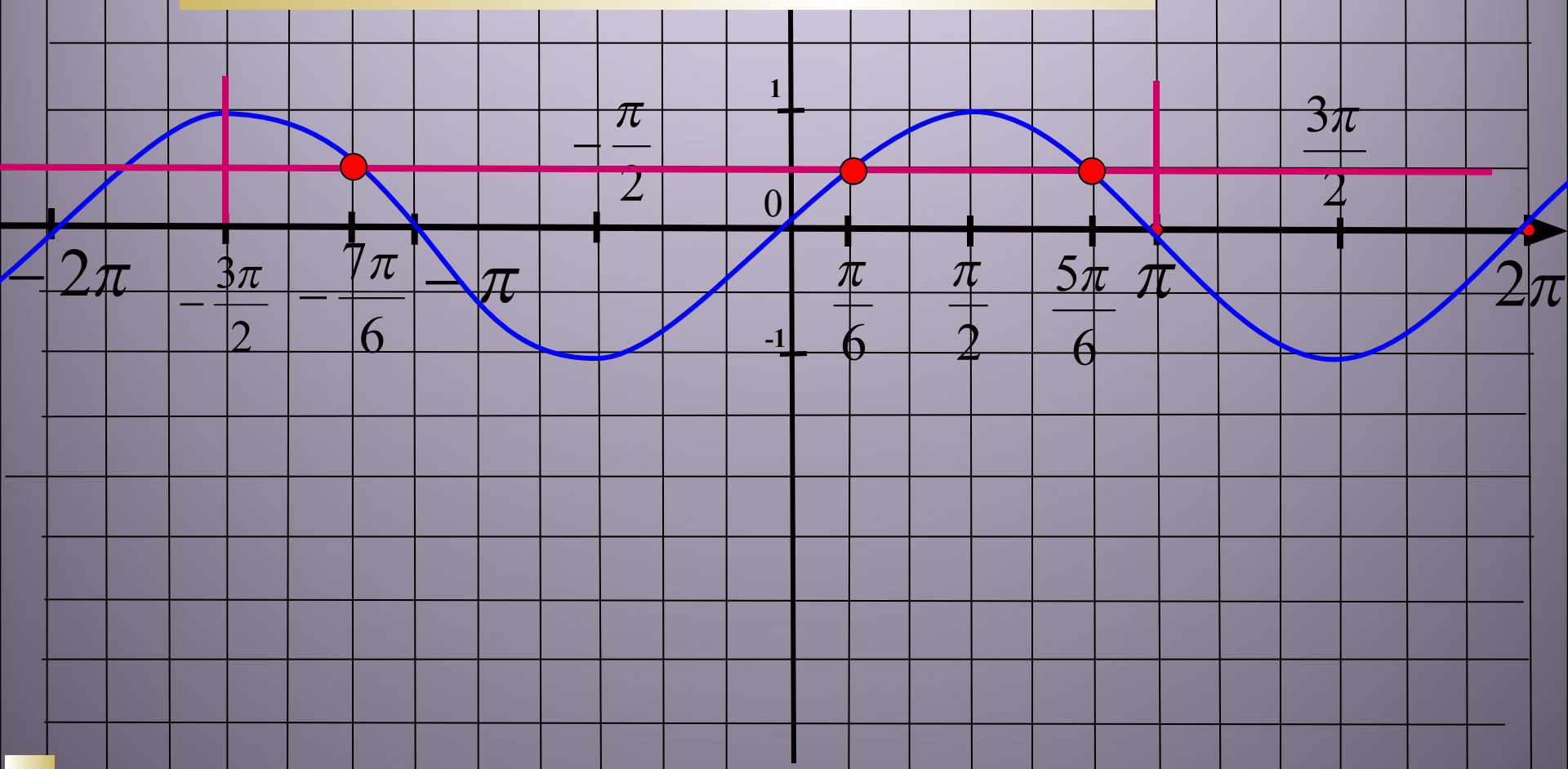
С помощью графика функции $y=\sin x$.выясните: сколько решений имеет уравнение $\sin x = 2$

T

С помощью графика функции $y=\sin x$ выясните:

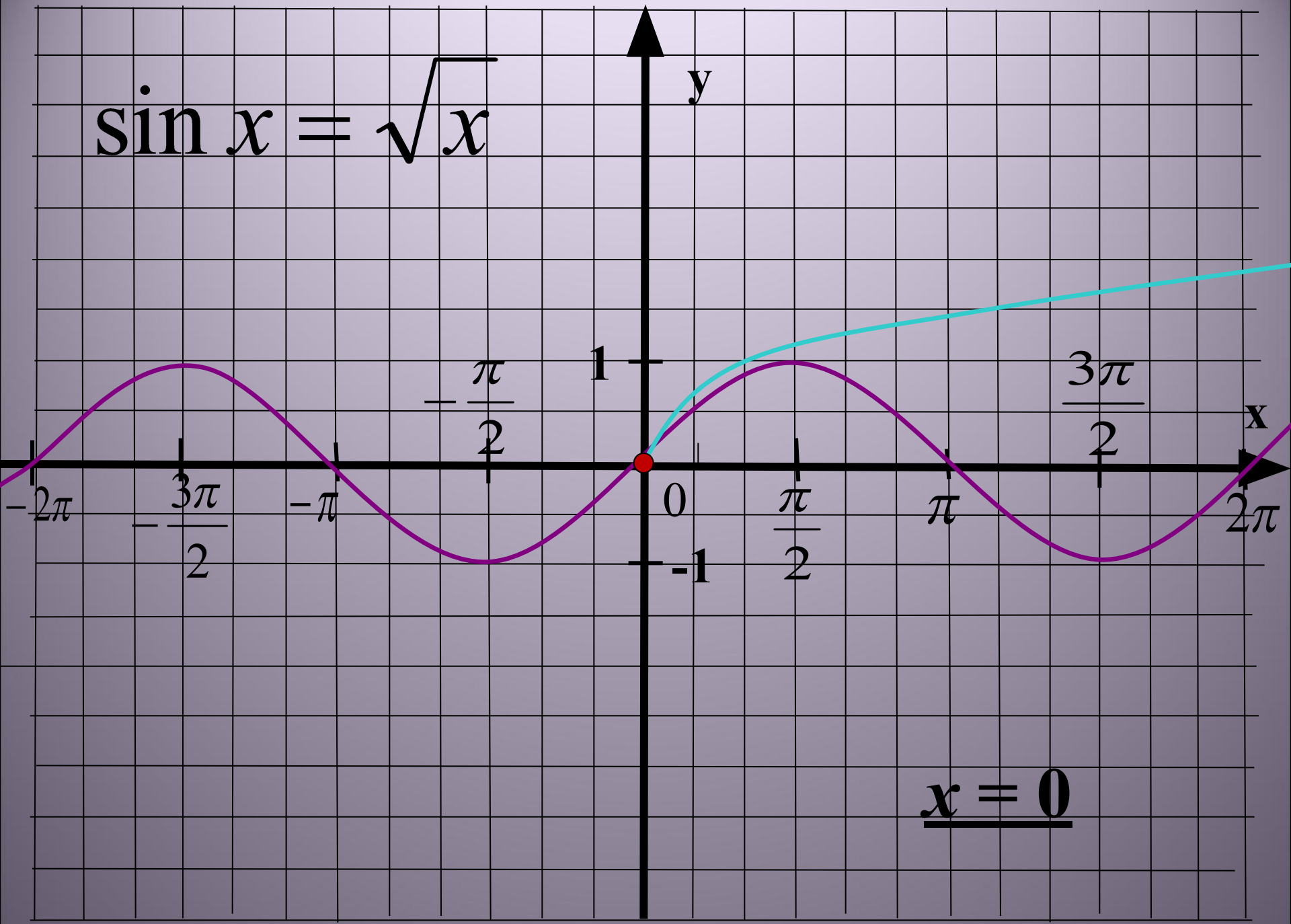
сколько решений имеет уравнение $\sin x = \frac{1}{2}$

на отрезке $\left[-\frac{3\pi}{2};\pi\right]$



T

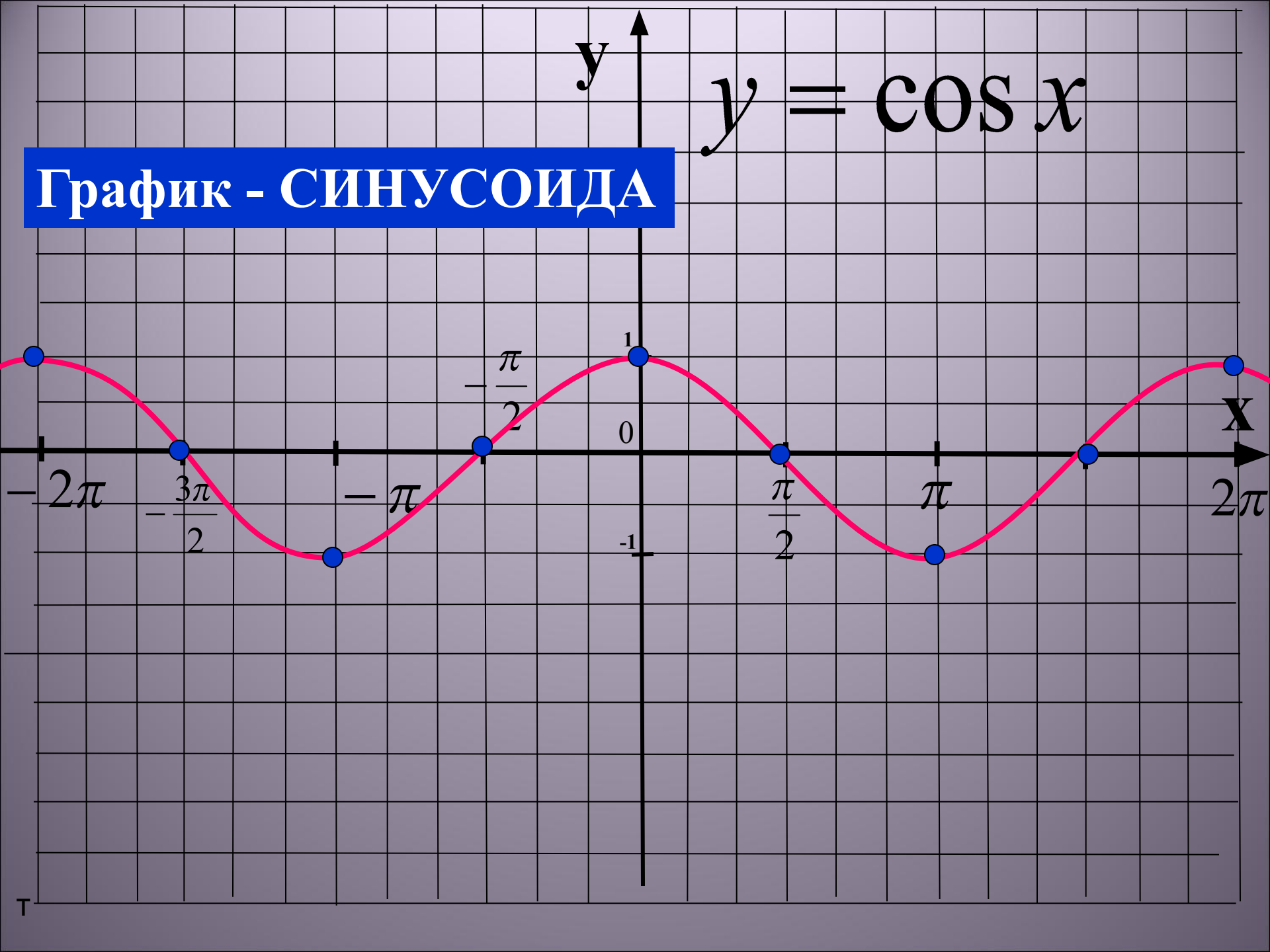
$\sin x = \sqrt{x}$



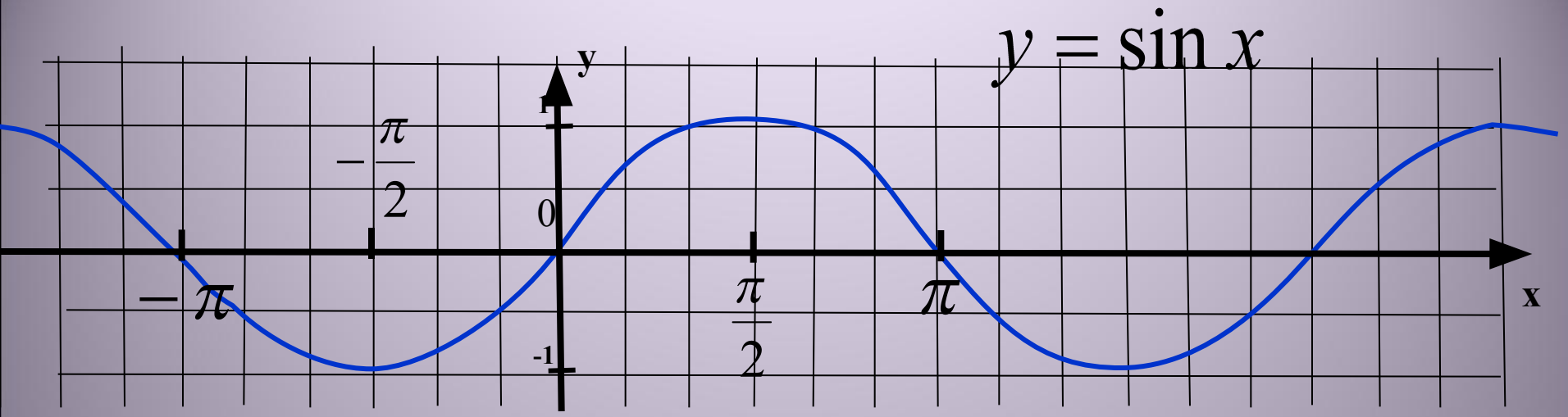
$x = 0$

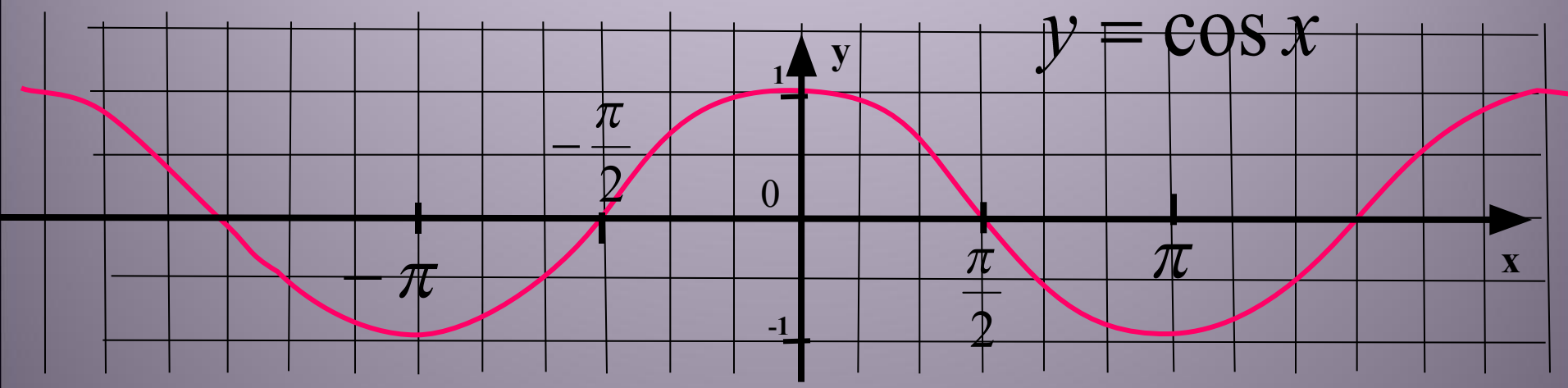
График - СИНУСОИДА

$y = \cos x$



T


y = sin x
y
1
0
-1
x
$-\frac{\pi}{2}$
$-\pi$
$\frac{\pi}{2}$
π


y = cos x
y
1
0
-1
x
$-\frac{\pi}{2}$
$-\pi$
$\frac{\pi}{2}$
π

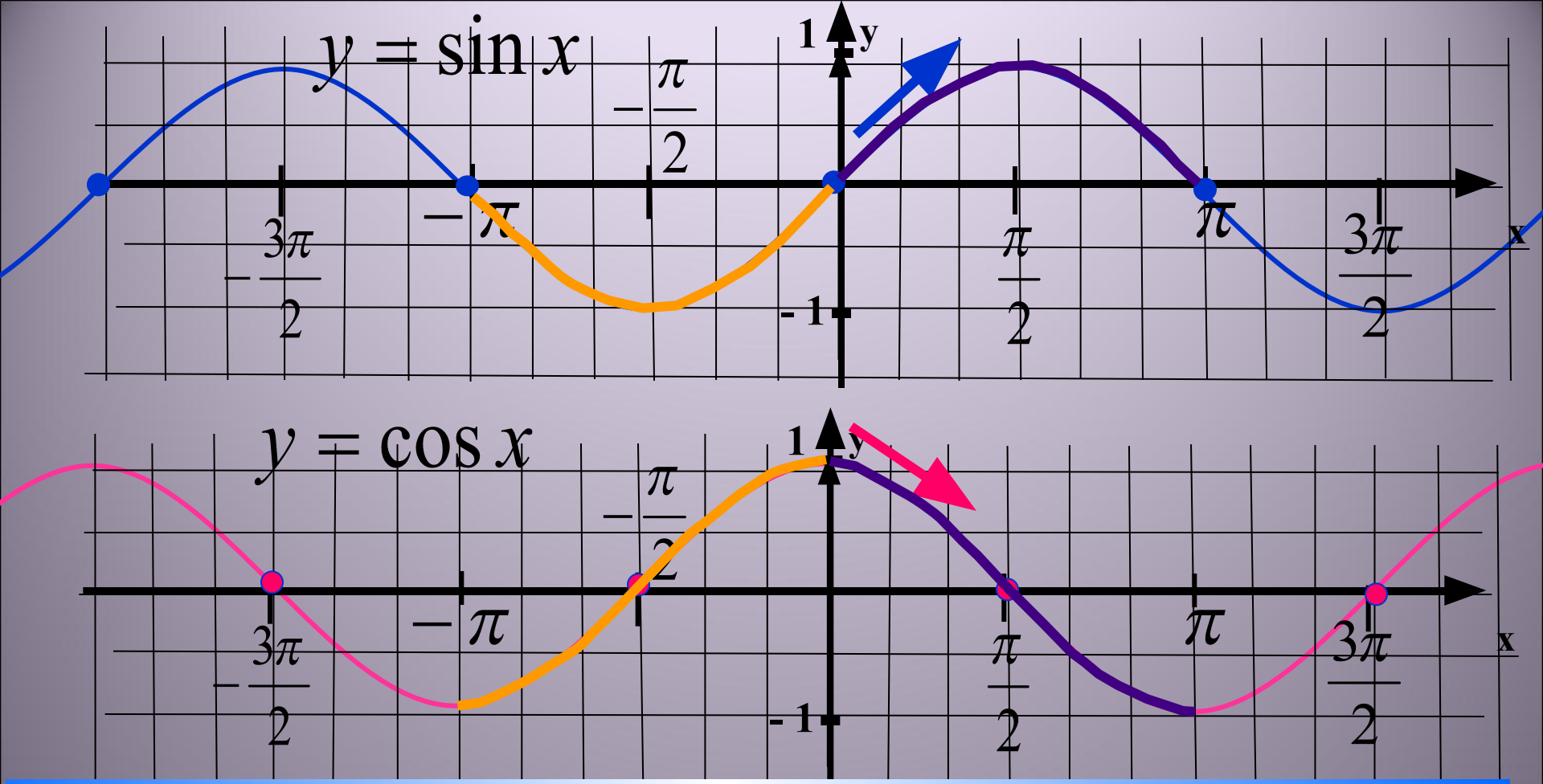
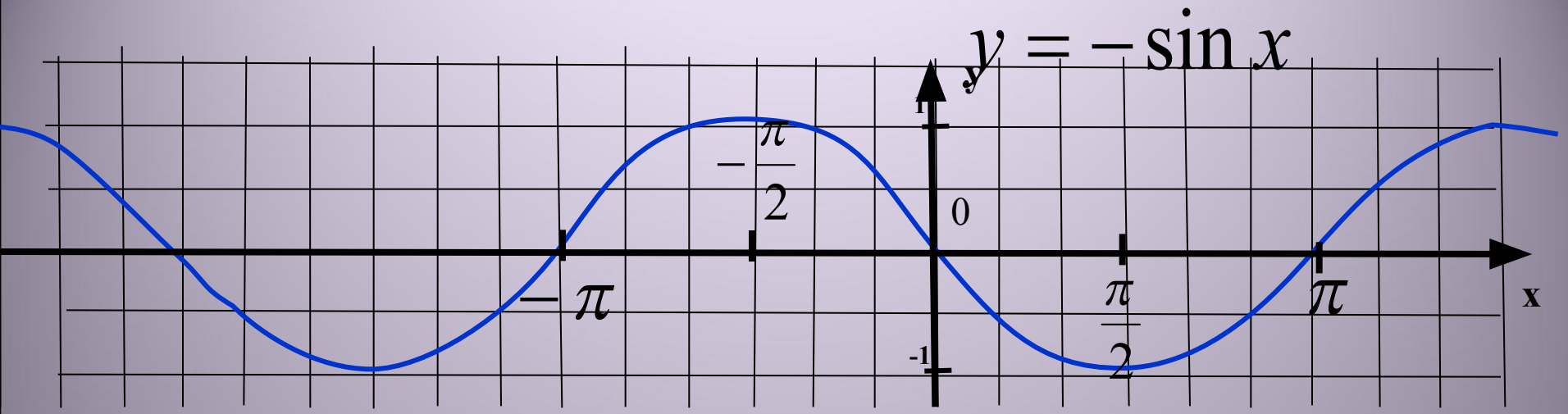
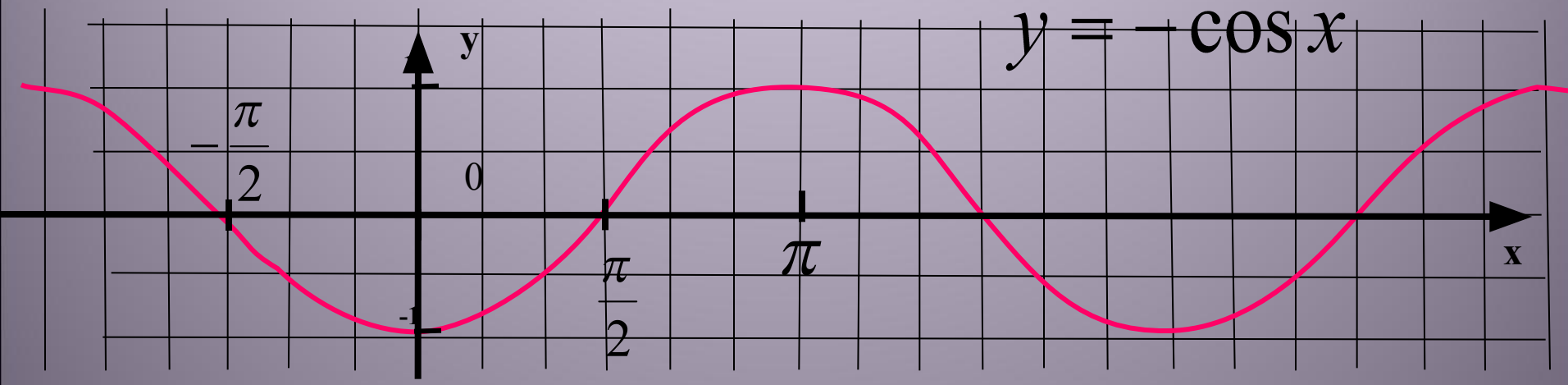


График функции $y=\sin x$ симметричен относительно нуля

График функции $y=\cos x$ симметричен относительно Оу


$y = -\sin x$
y
1
0
-1
x
$-\frac{\pi}{2}$
$-\pi$
$\frac{\pi}{2}$
π


$y = -\cos x$
y
0
-1
x
$-\frac{\pi}{2}$
$\frac{\pi}{2}$
π