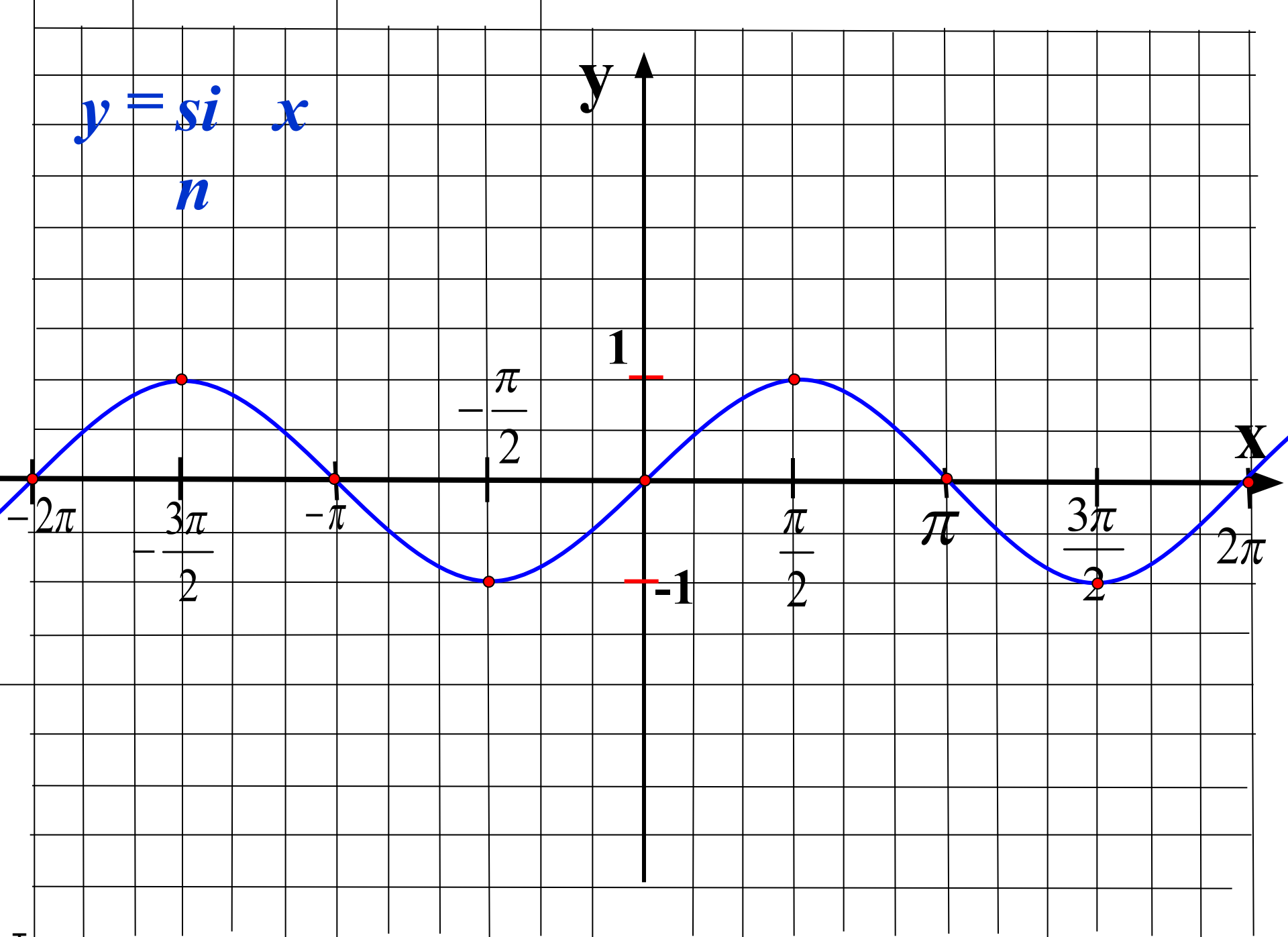


Функция $y=\sin x$

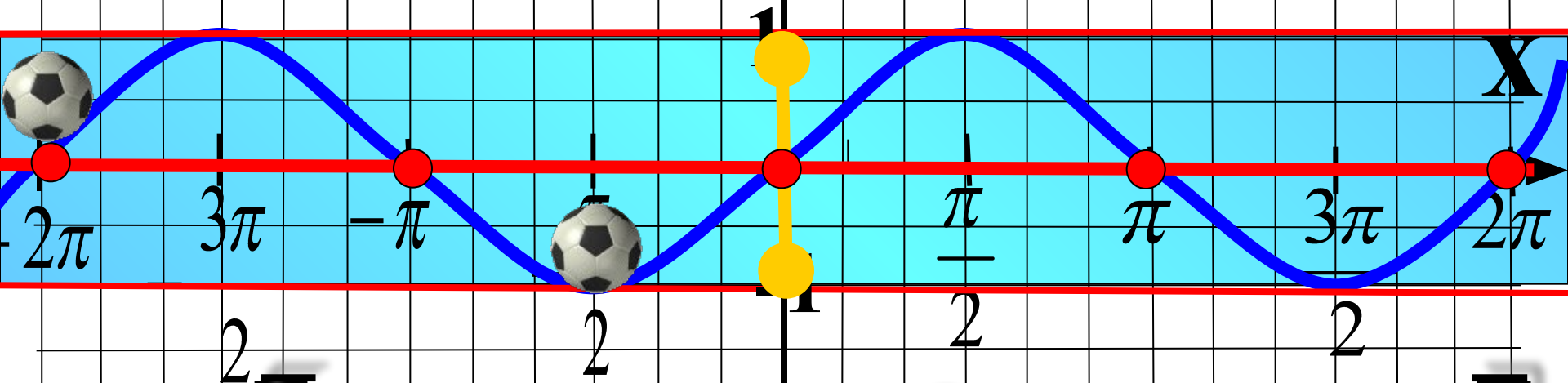
Свойства.

**Преобразование
графиков.**





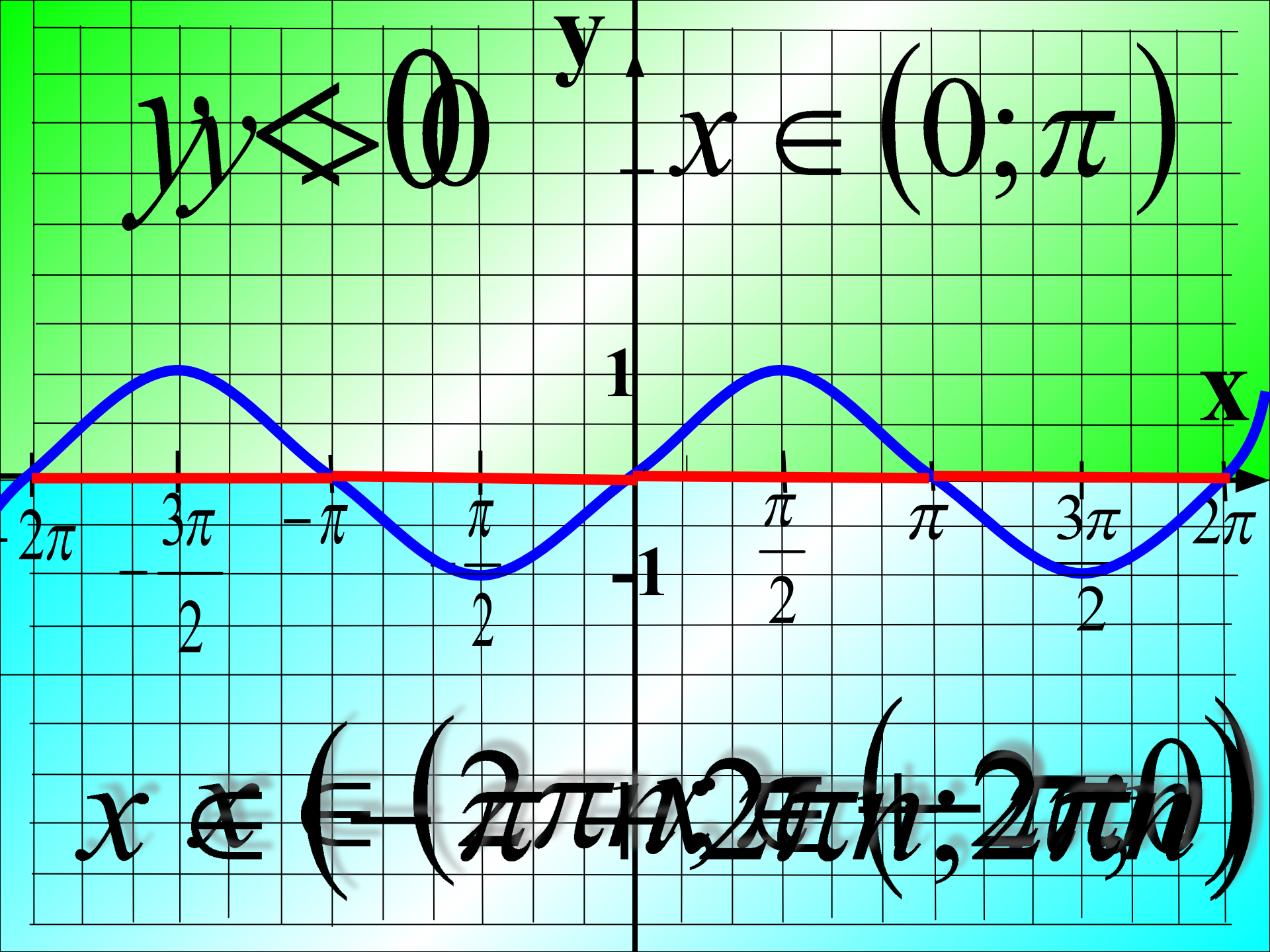
$$D(y) : y \in [-1; +1]$$



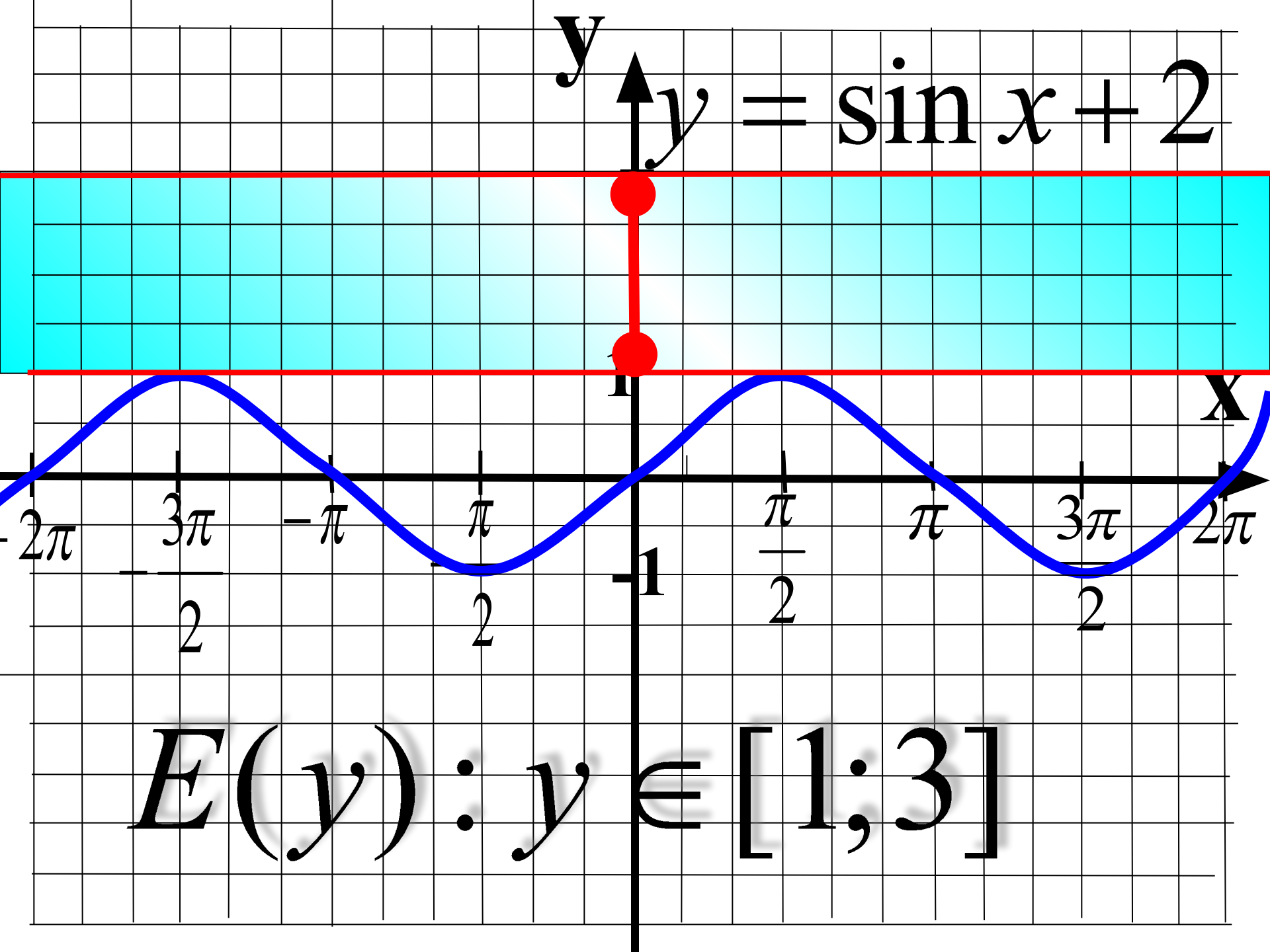
$$x \in \left[-\frac{\pi}{2}, \frac{\pi}{2} \right]$$

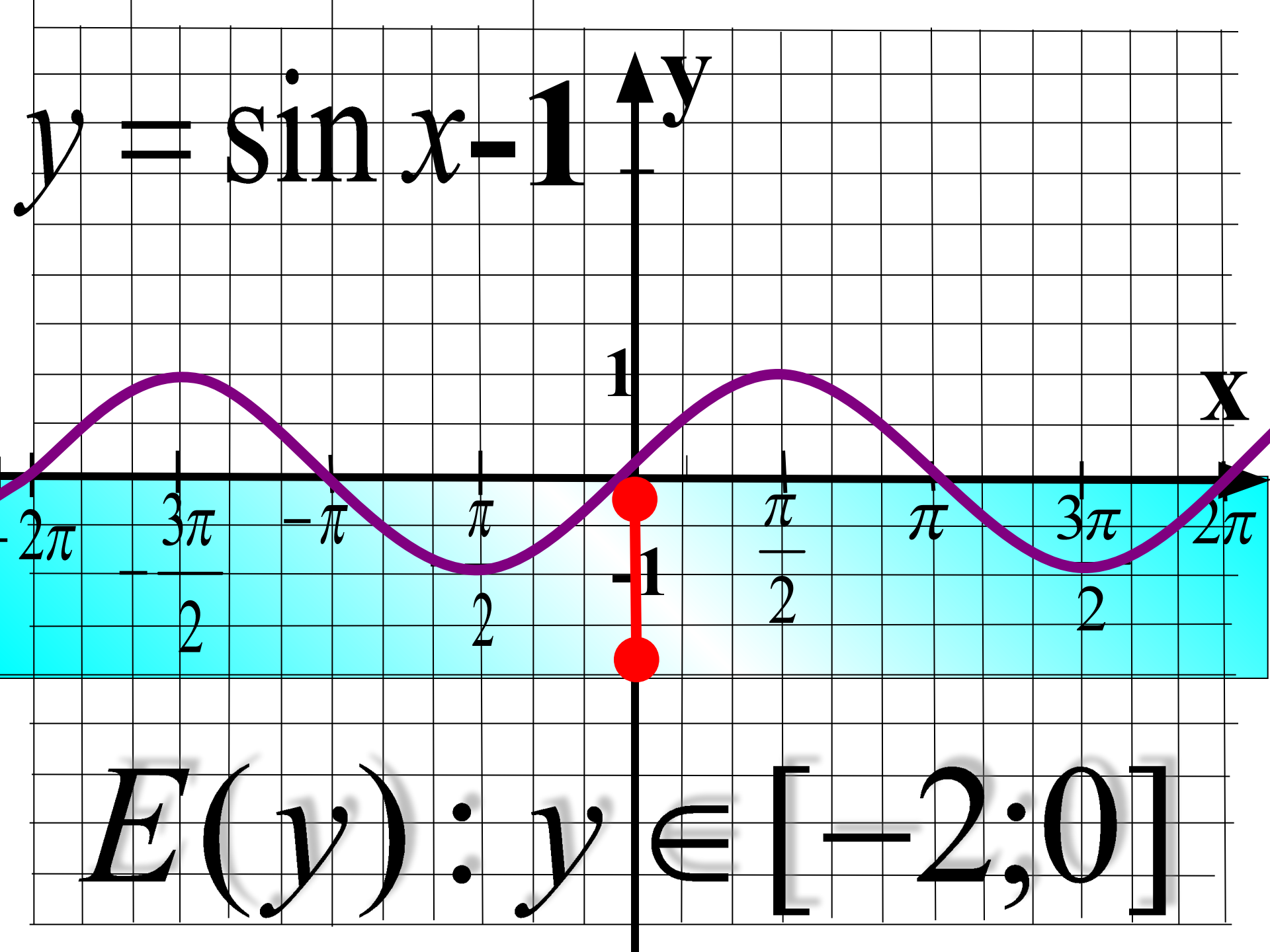
$$y \leq 0$$

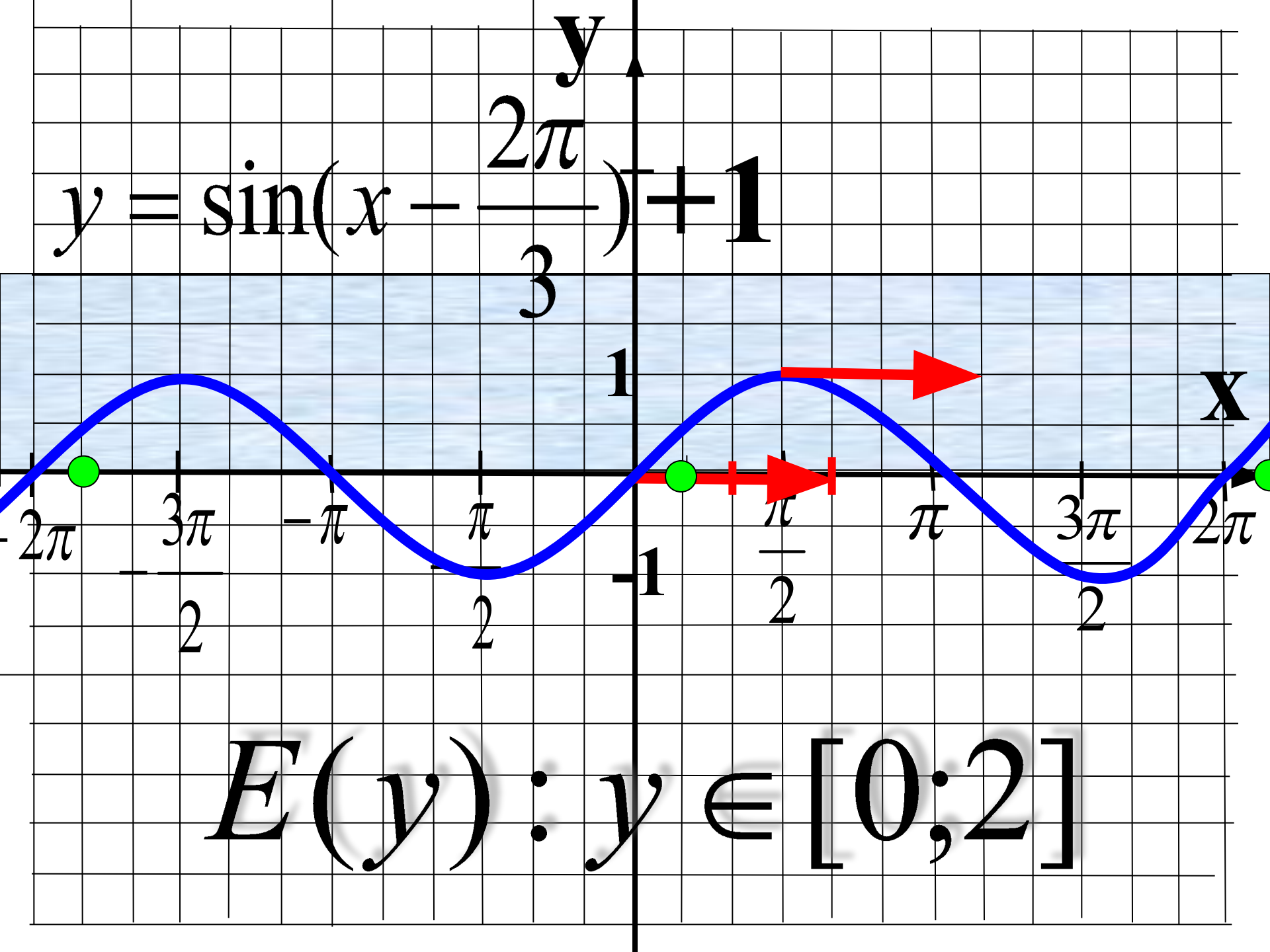
$$x \in (0; \pi)$$



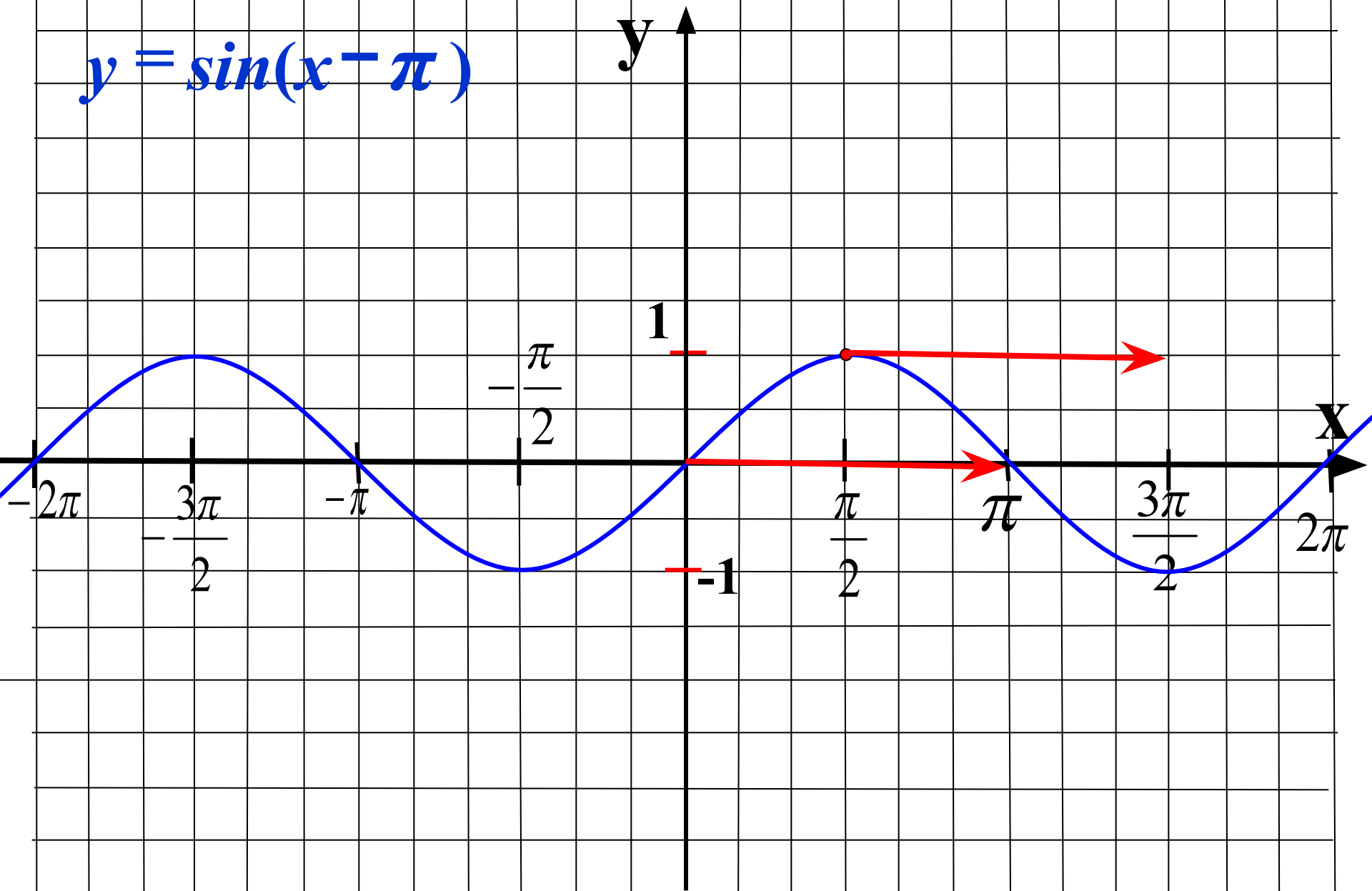
$$x \in (-\pi, \pi)$$

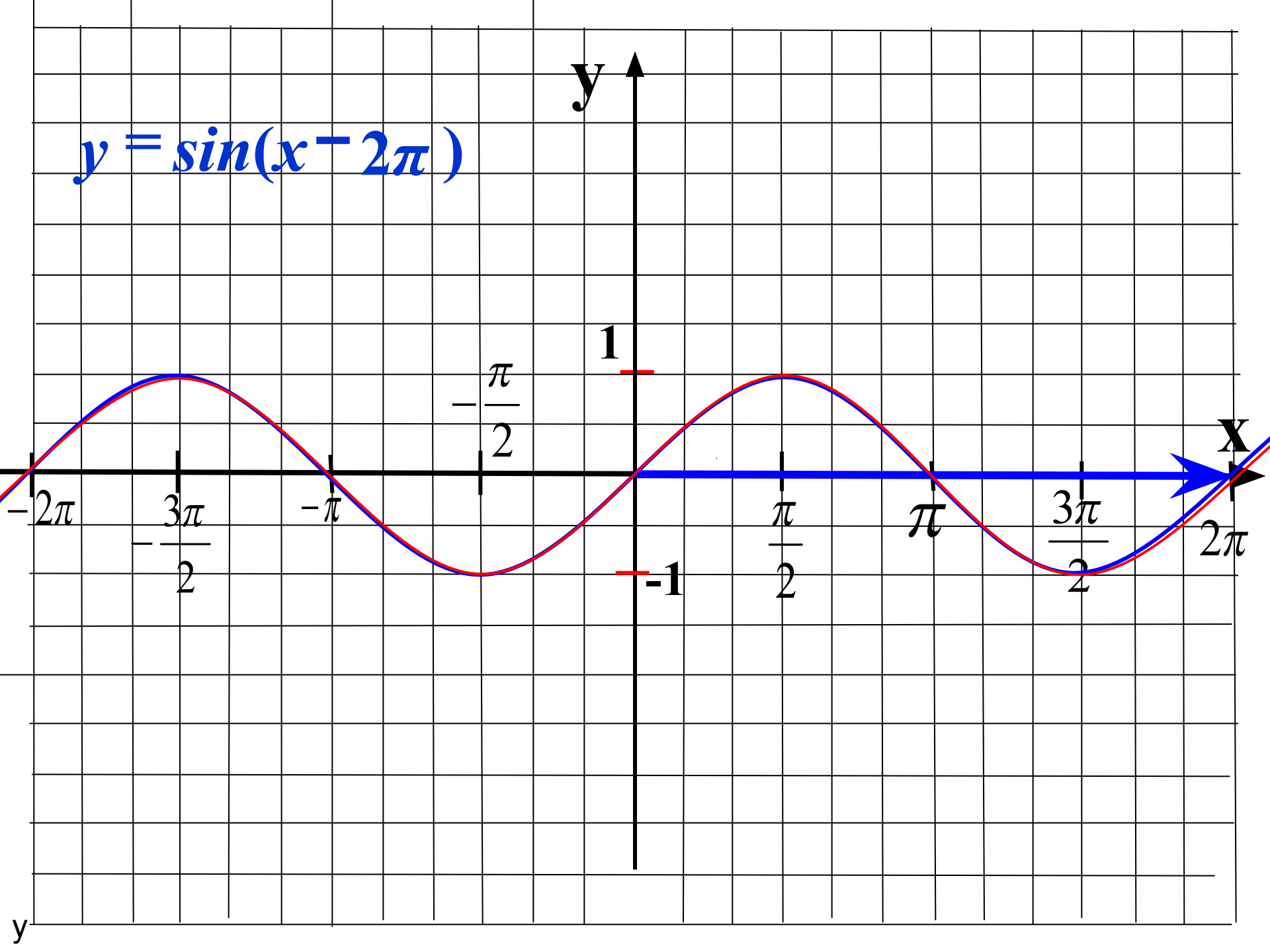


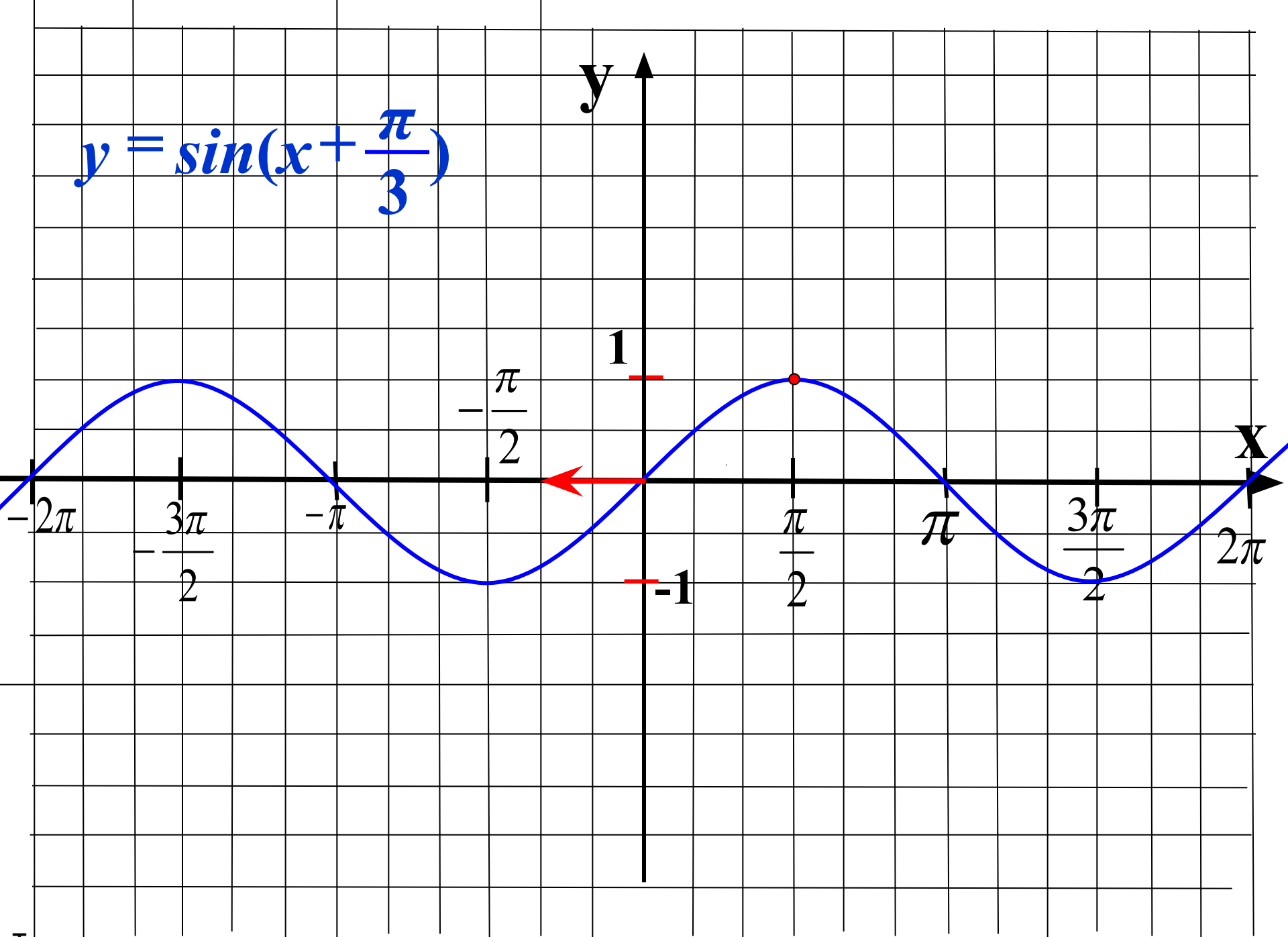




$$y = \sin(x - \pi)$$

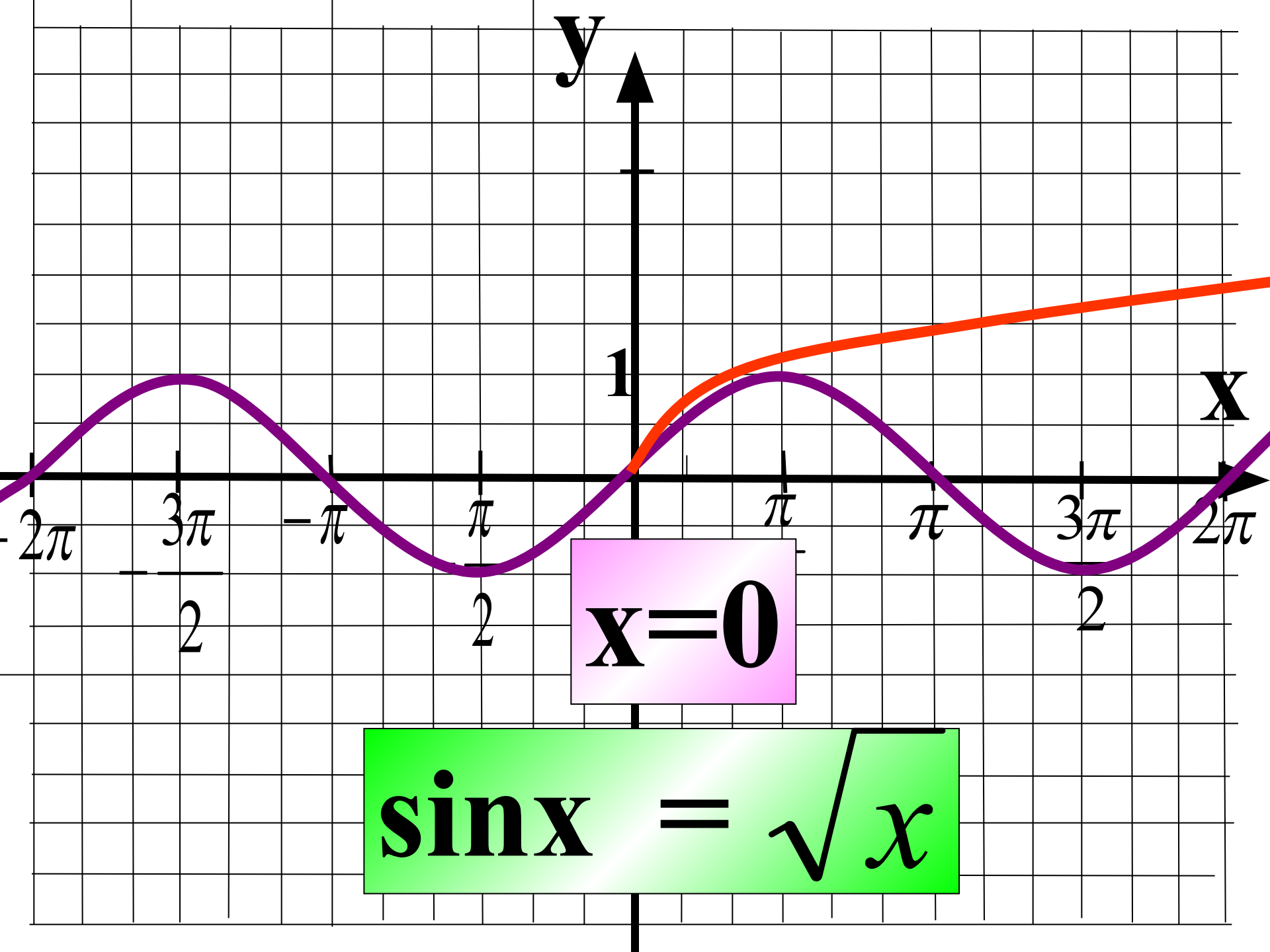


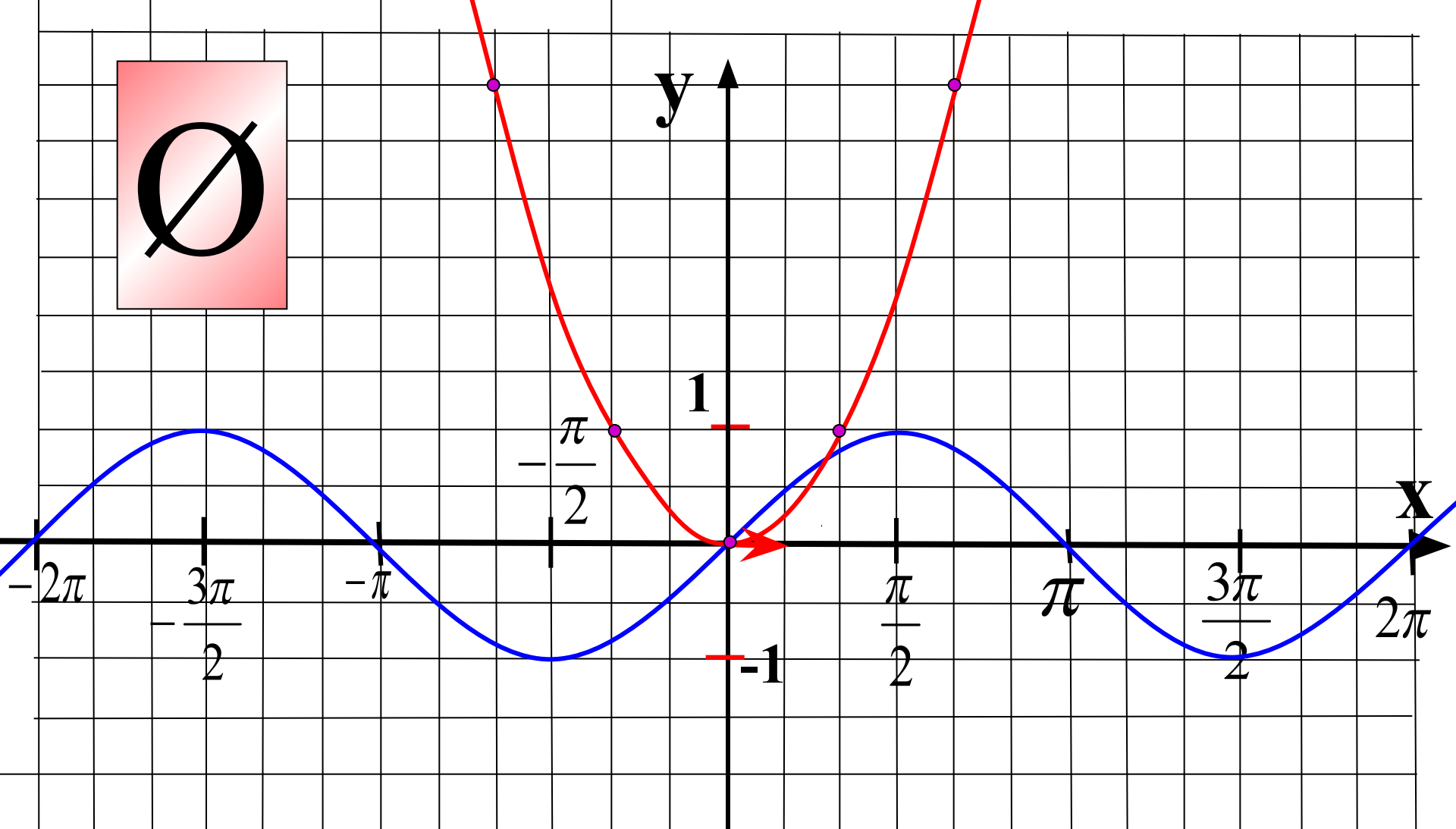
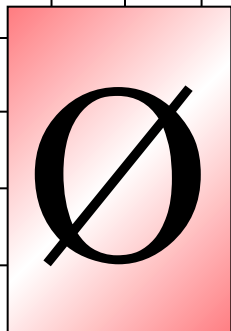




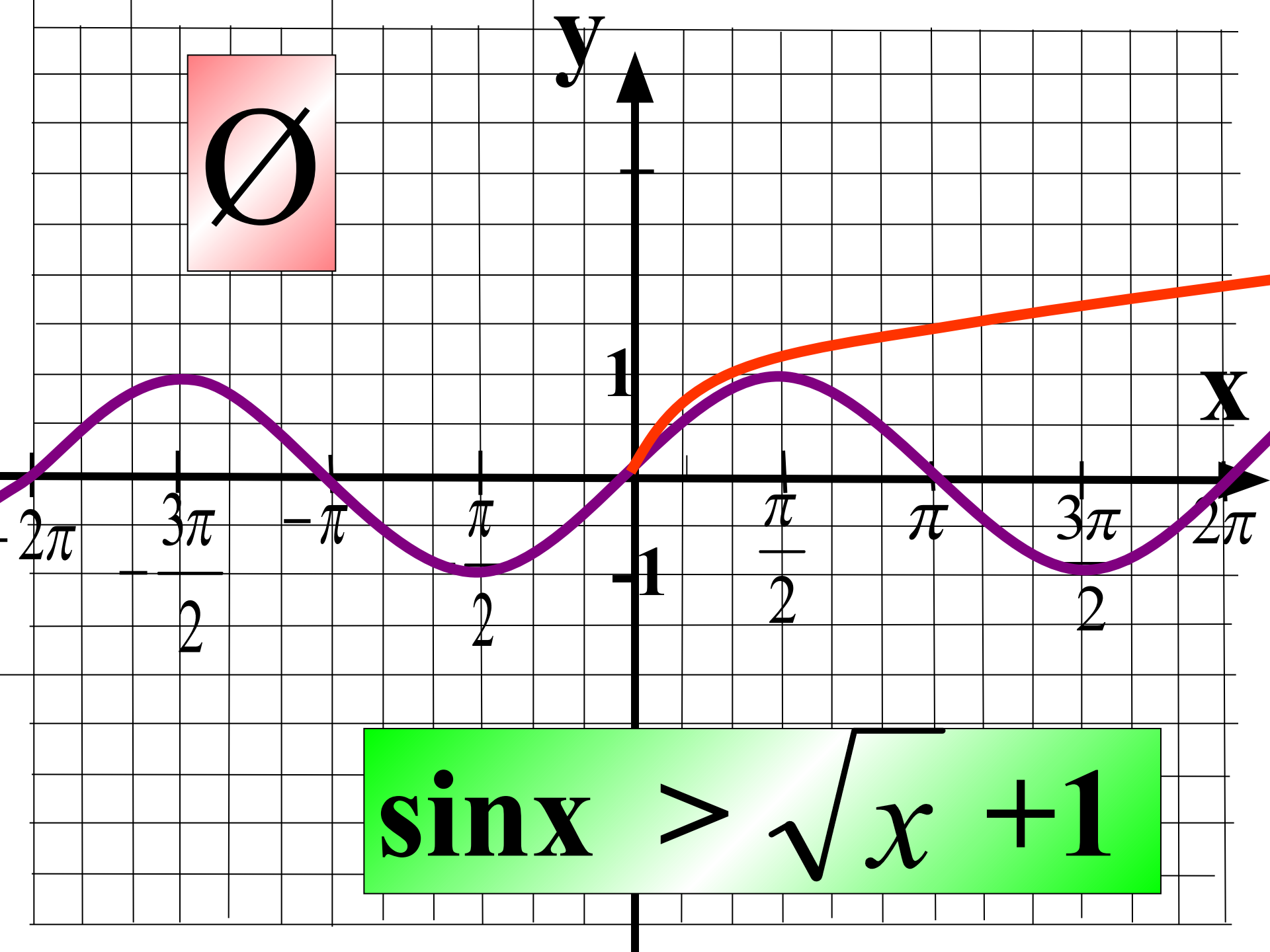
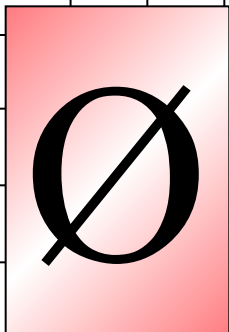
$$y = \sin\left(x + \frac{\pi}{3}\right)$$

попречный срез речки урбаниз и неурбаниз





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

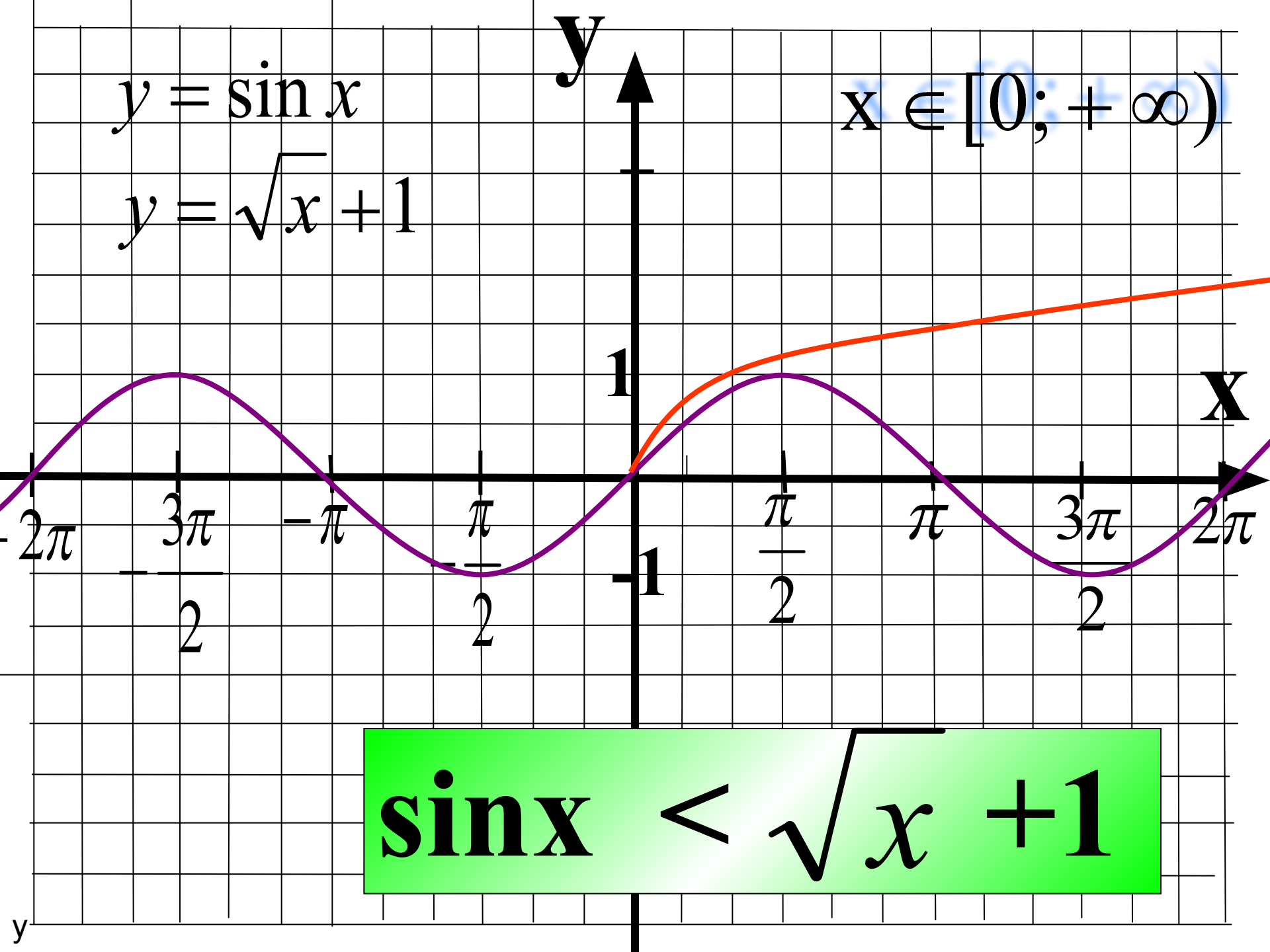


$$\sin x > \sqrt{x+1}$$

$$y = \sin x$$

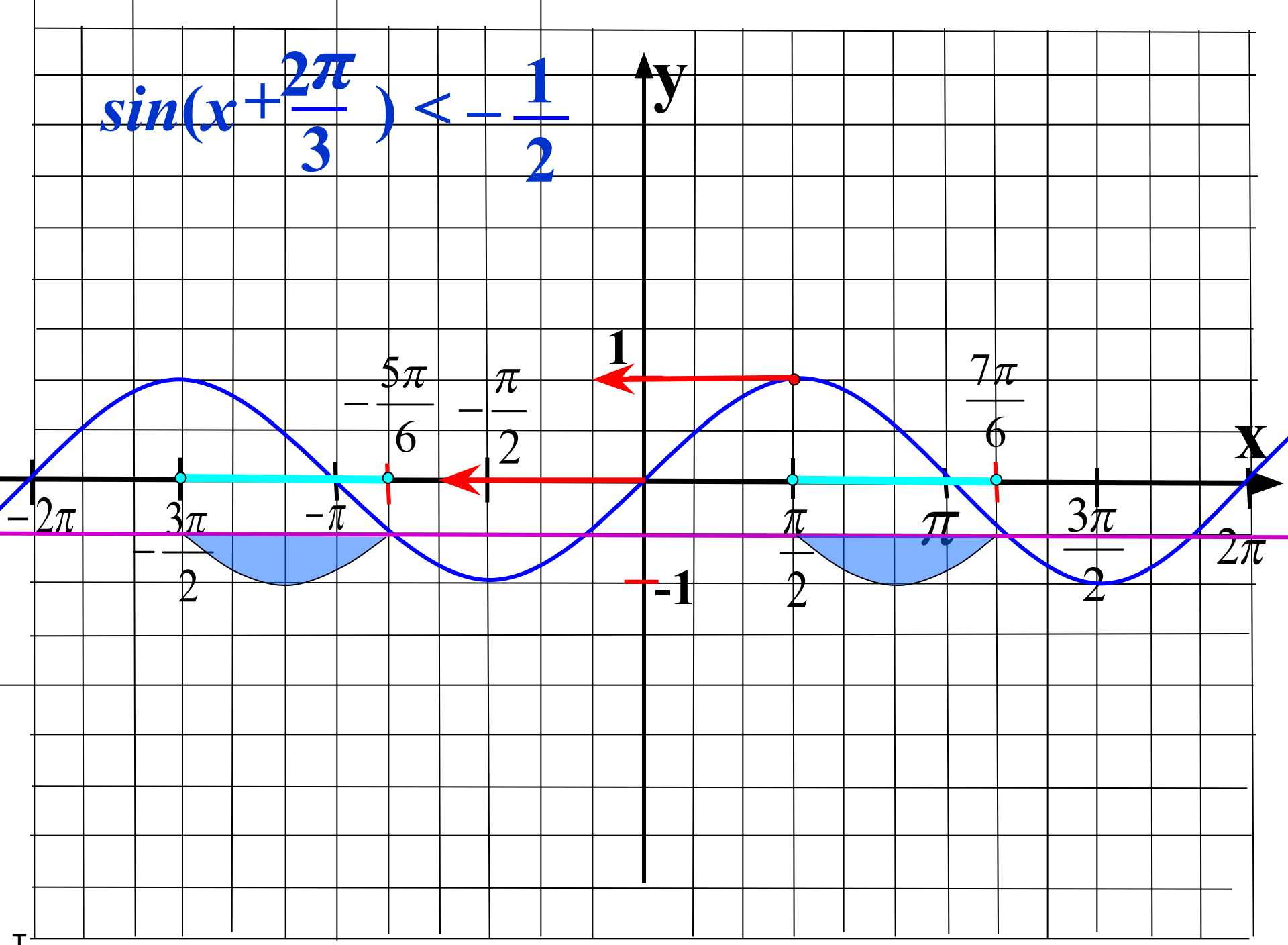
$$y = \sqrt{x} + 1$$

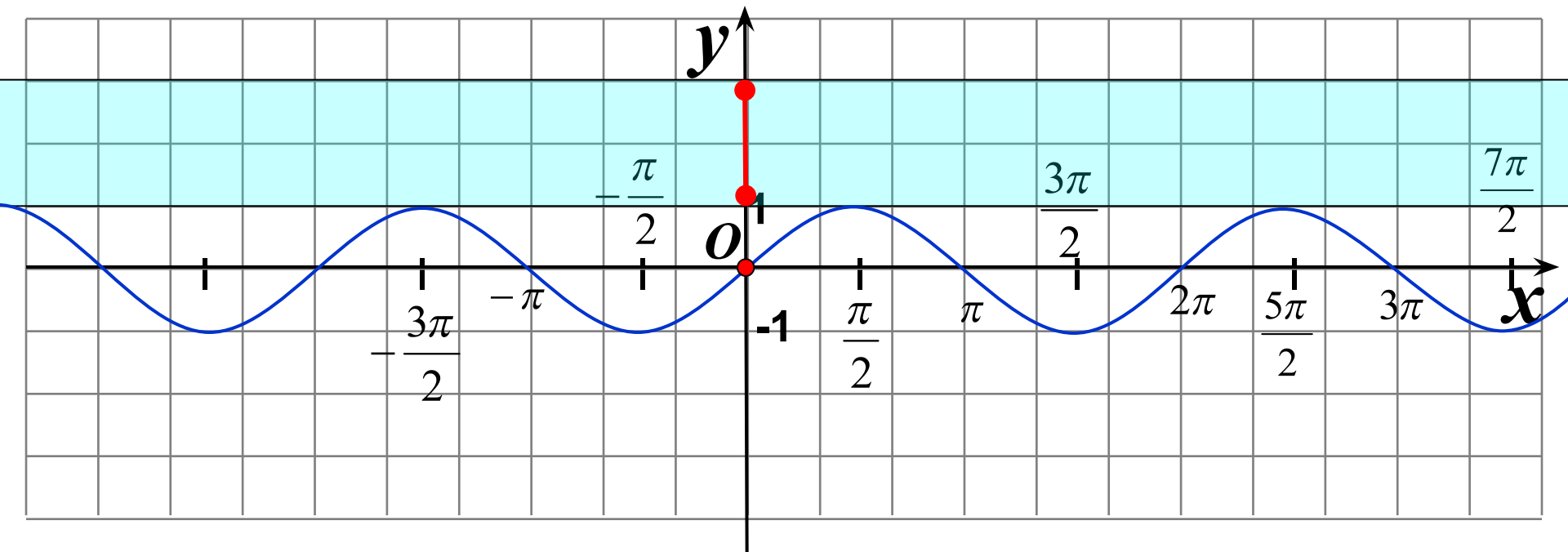
$$x \in [0; +\infty)$$



$$\sin x < \sqrt{x} + 1$$

$$\sin\left(x + \frac{2\pi}{3}\right) < -\frac{1}{2}$$





Найти область значений функции

Единичный отрезок – 1 клетка.

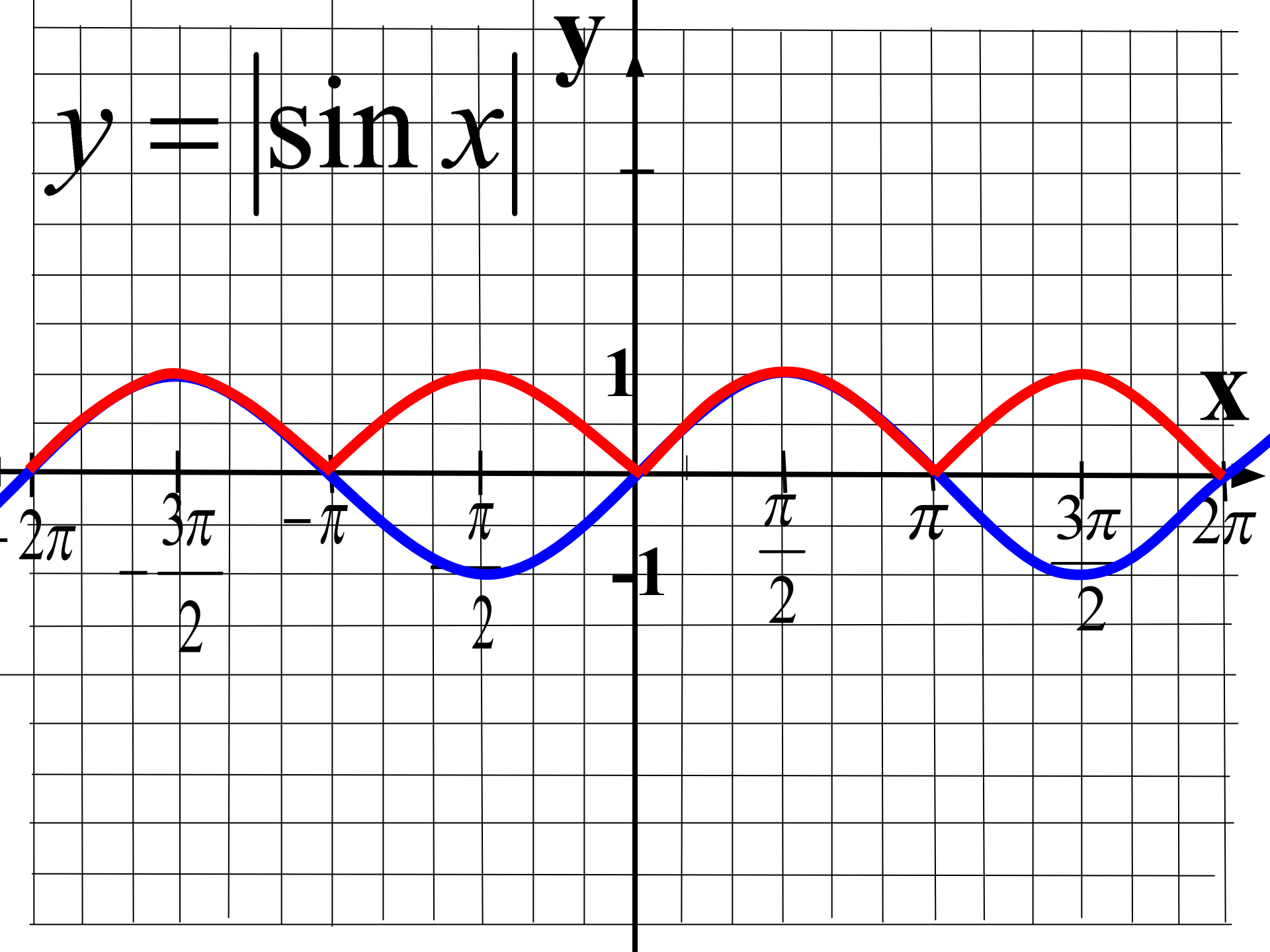
$$y = \sin\left(x - \frac{3\pi}{2}\right) + 2$$

$$E(y) : y \in [1; 3]$$

Умение строить графики нам нужны при ...

- ✓ решении уравнений;
- ✓ решении неравенств;
- ✓ решении заданий, связанных с исследованием свойств функций.

Рассмотрим графики функций, аналитическая запись которых содержит знак абсолютной величины.



$$y = \sin|x|$$

