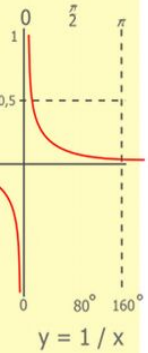
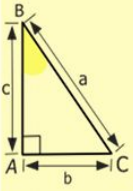
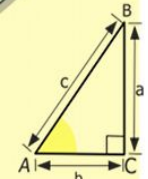
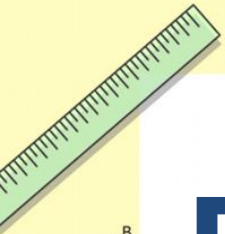


# Математик

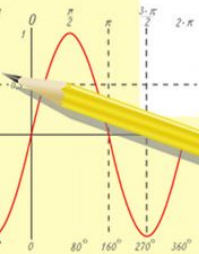
а

# Решение простейших тригонометрических неравенств



$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 2100 \\ + 840 \\ \hline 105000 \end{array}$$

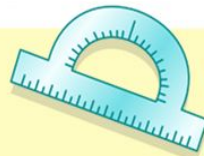
- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

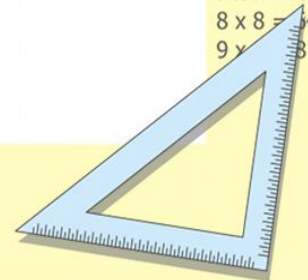
$$\sin 90^\circ = 1$$



$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$$(x+y)(x-y) = x^2 - y^2$$



# Тригонометрические неравенства

Решим неравенство:

$$\sin x \geq \frac{1}{2}$$

$$\sin x \geq \frac{1}{2}$$

Решением уравнения

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

являются  $x = \frac{\pi}{6} + 2\pi n$ , и  $\frac{5\pi}{6} + 2\pi n$

которые соответствуют точкам на единичной окружности с ординатой, равной 0,5

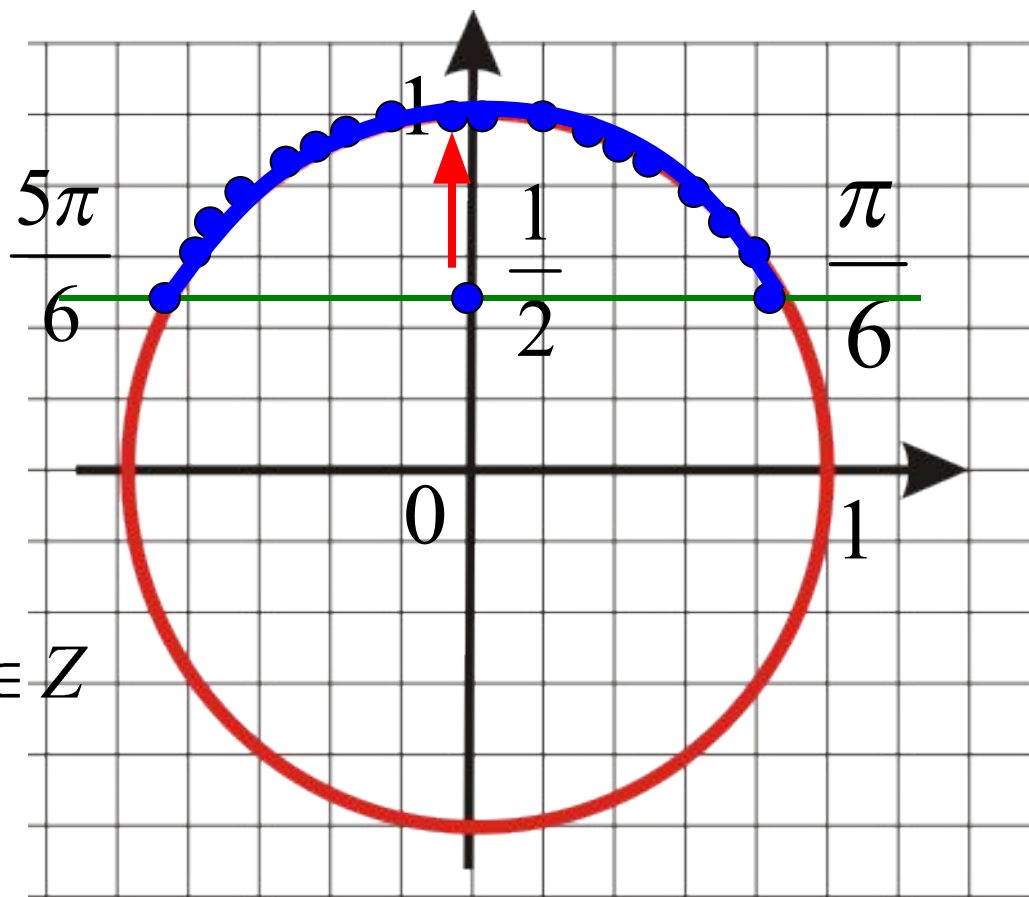
Решением неравенства

$$\sin x \geq \frac{1}{2}$$

будут все точки единичной числовой окружности, у которых ордината больше

$$\frac{1}{2}$$

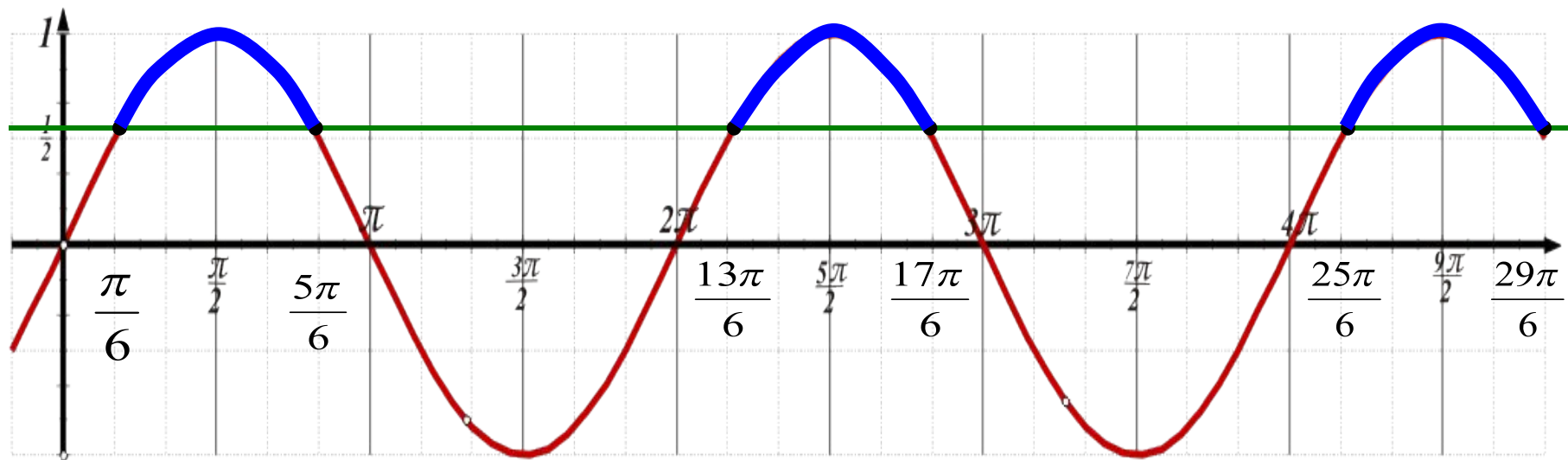
$$x = \left[ \frac{\pi}{6} + 2\pi n; \frac{5\pi}{6} + 2\pi n \right], n \in \mathbb{Z}$$



$$\sin x \geq \frac{1}{2}$$

*Рассмотрим функцию*

$$y = \sin x$$

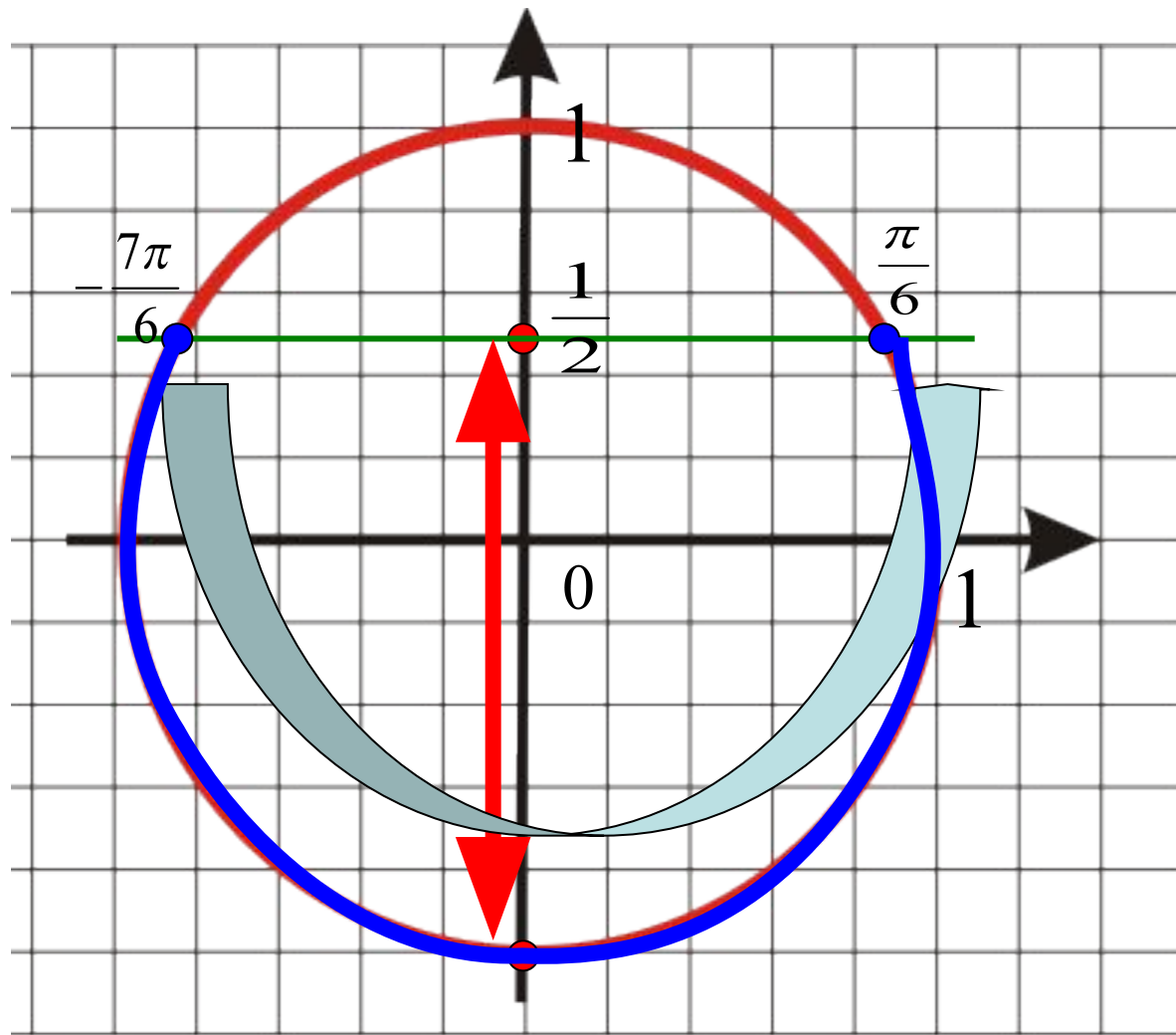


$$x = \left[ \frac{\pi}{6} + 2\pi n; \frac{5\pi}{6} + 2\pi n \right], n \in \mathbb{Z}$$

Рассмотрим неравенство :

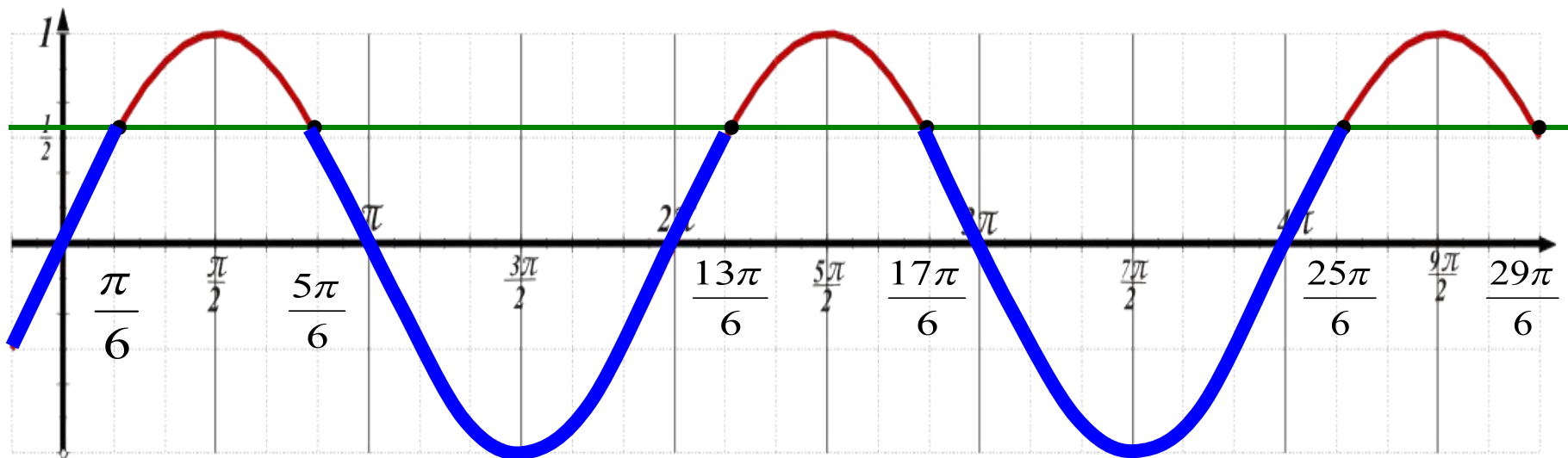
$$\sin x \leq \frac{1}{2}$$

$$\sin x \leq \frac{1}{2}$$



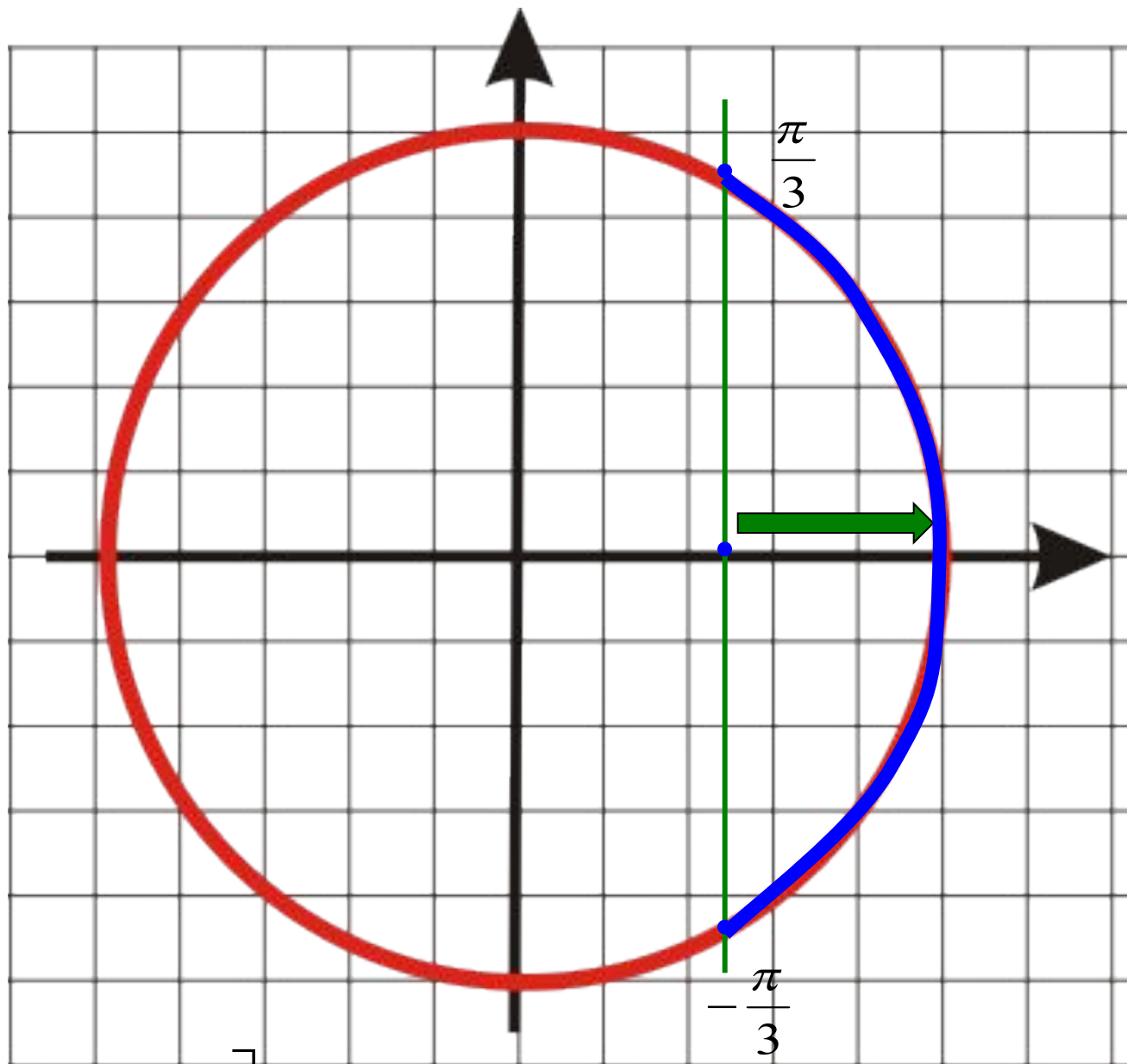
$$x = \left[ -\frac{7\pi}{6} + 2\pi n; \frac{\pi}{6} + 2\pi n \right], n \in \mathbb{Z}$$

$$\sin x \leq \frac{1}{2}$$



$$x = \left[ -\frac{7\pi}{6} + 2\pi n; \frac{\pi}{6} + 2\pi n \right], n \in \mathbb{Z}$$

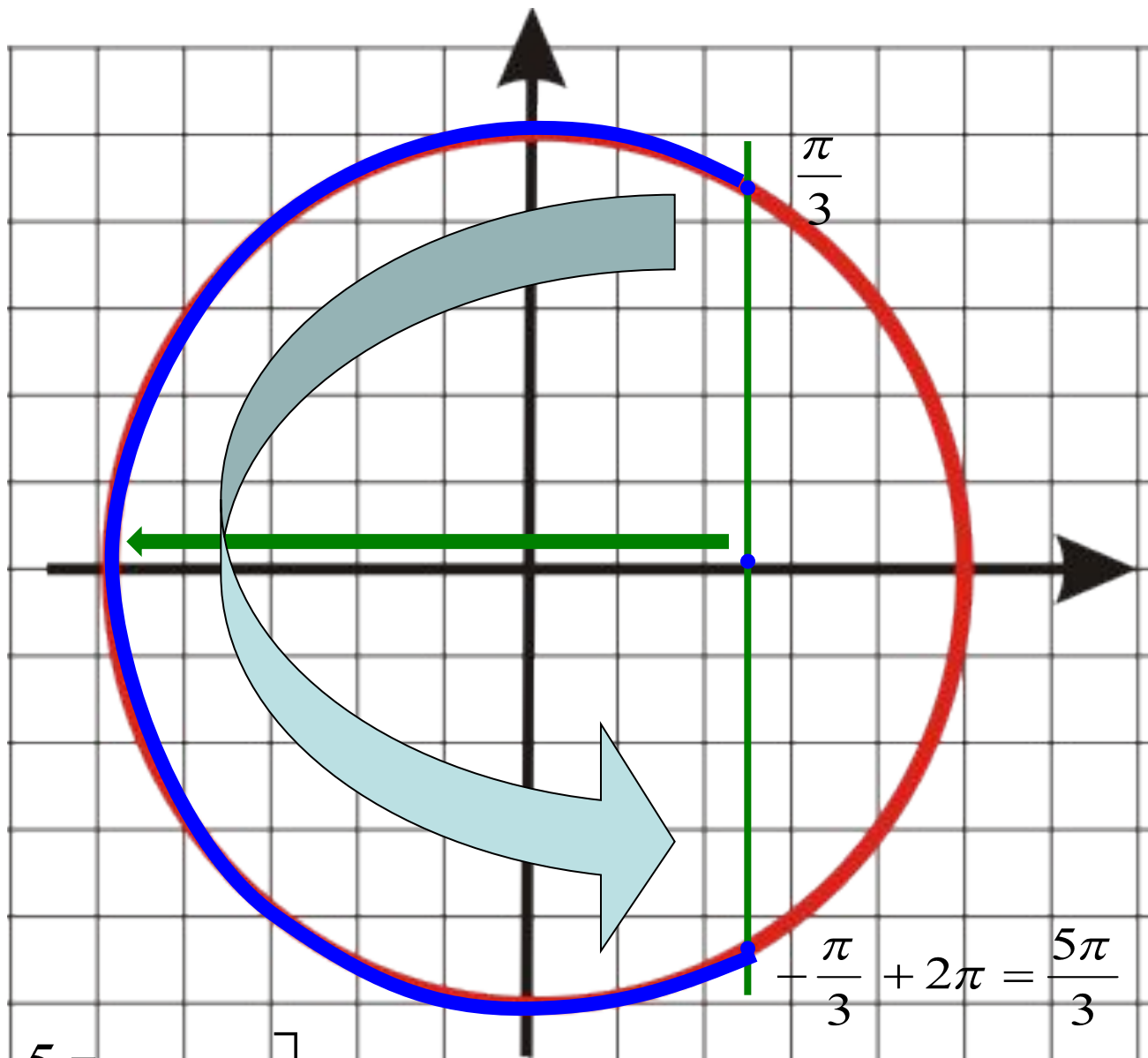
$$\cos x \geq \frac{1}{2}$$



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

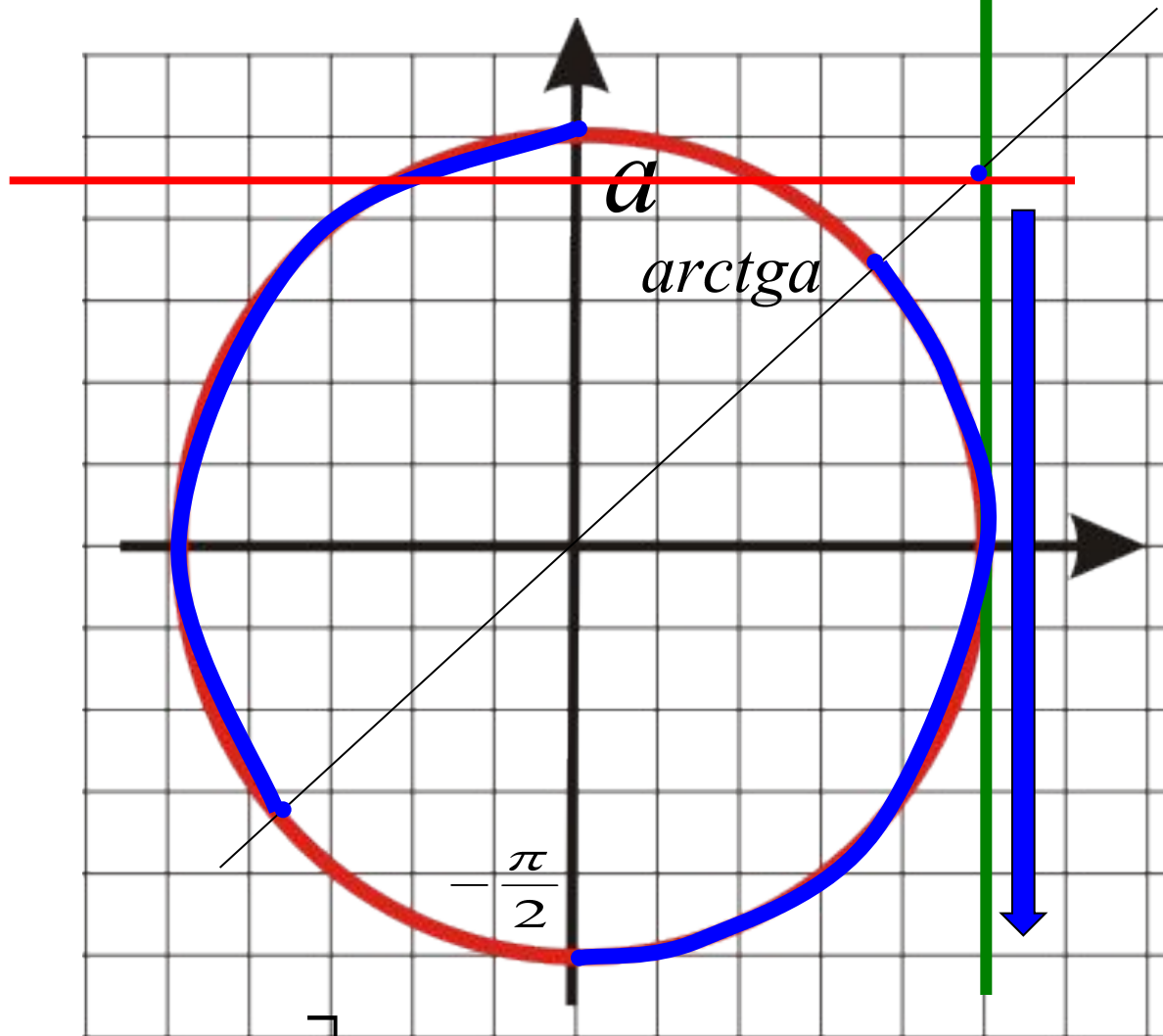


$$\cos x \leq \frac{1}{2}$$



$$x = \left[ \frac{\pi}{3} + 2\pi n; \frac{5\pi}{3} + 2\pi n \right], n \in \mathbb{Z}$$

$$\operatorname{tg} x \leq a$$



$$x = \left[ -\frac{\pi}{2} + \pi n; \arctg a + \pi n \right], n \in \mathbb{Z}$$