Математик
а

Решение простейших тригонометрических неравенств

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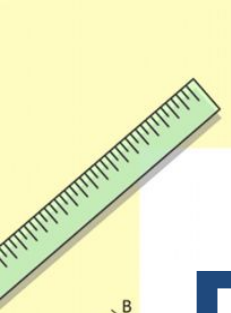
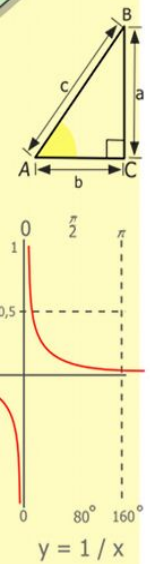

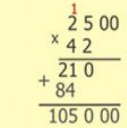
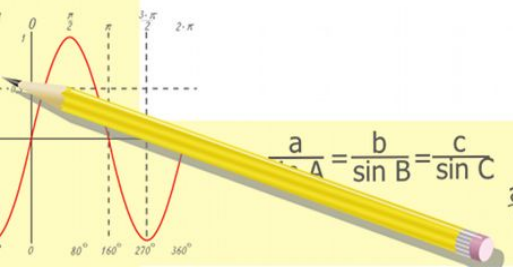

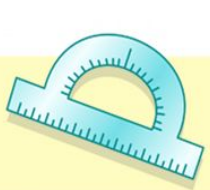
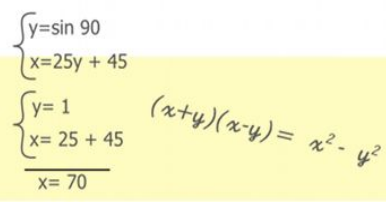

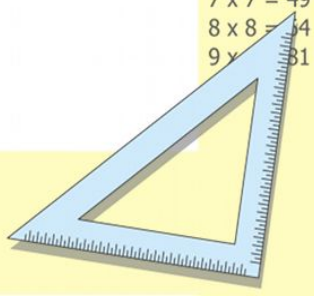

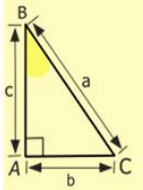
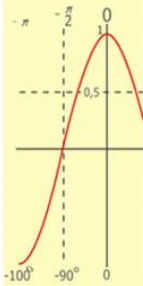

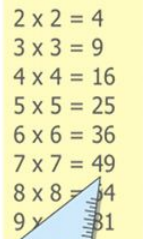

Тригонометрические неравенства

Решим неравенство:

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

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

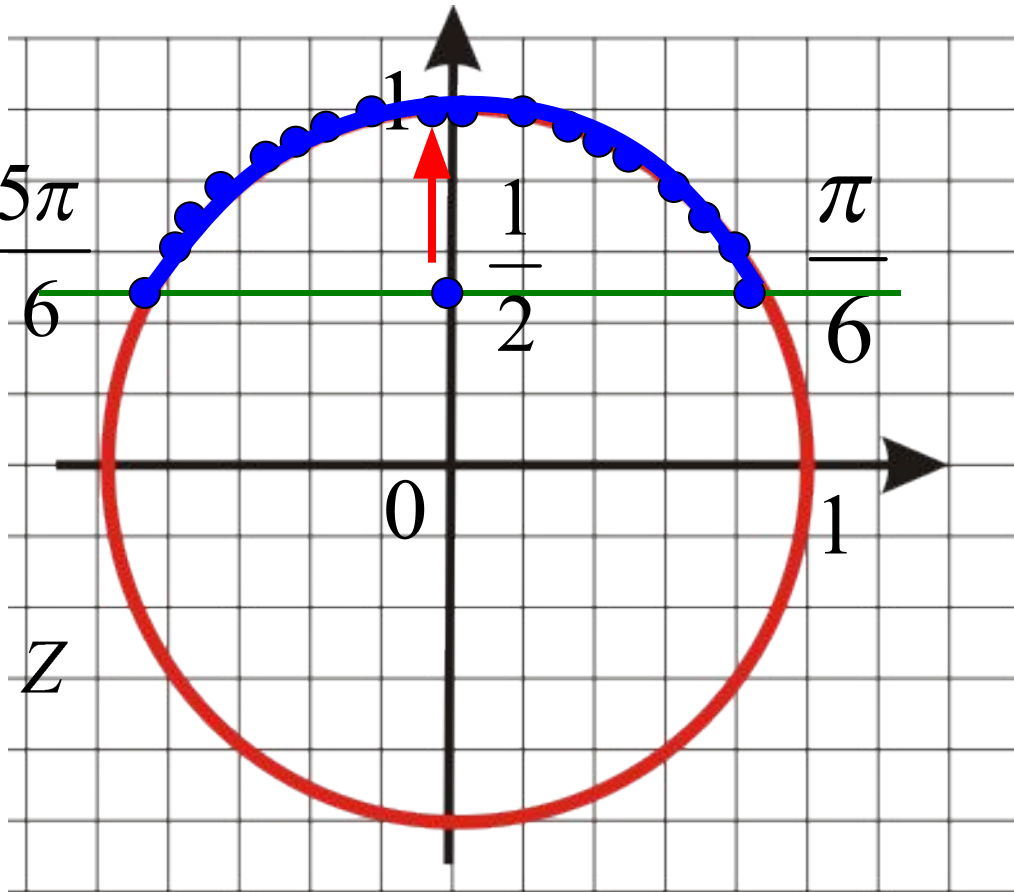
являются x = $\frac{\pi}{6} + 2\pi n,$ и $\frac{5\pi}{6} + 2\pi n$

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 $\frac{1}{2}$

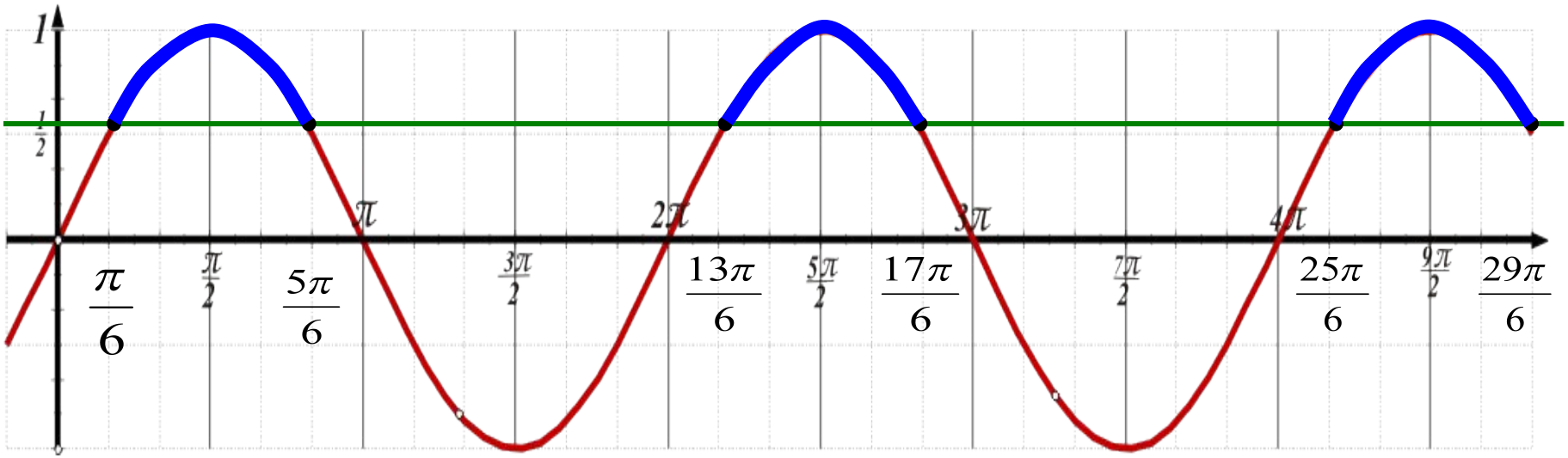
$$x = \left[\frac{\pi}{6} + 2\pi n; \frac{5\pi}{6} + 2\pi n\right], n \in Z$$



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

Рассмотрим функцию

$$y = \sin x$$

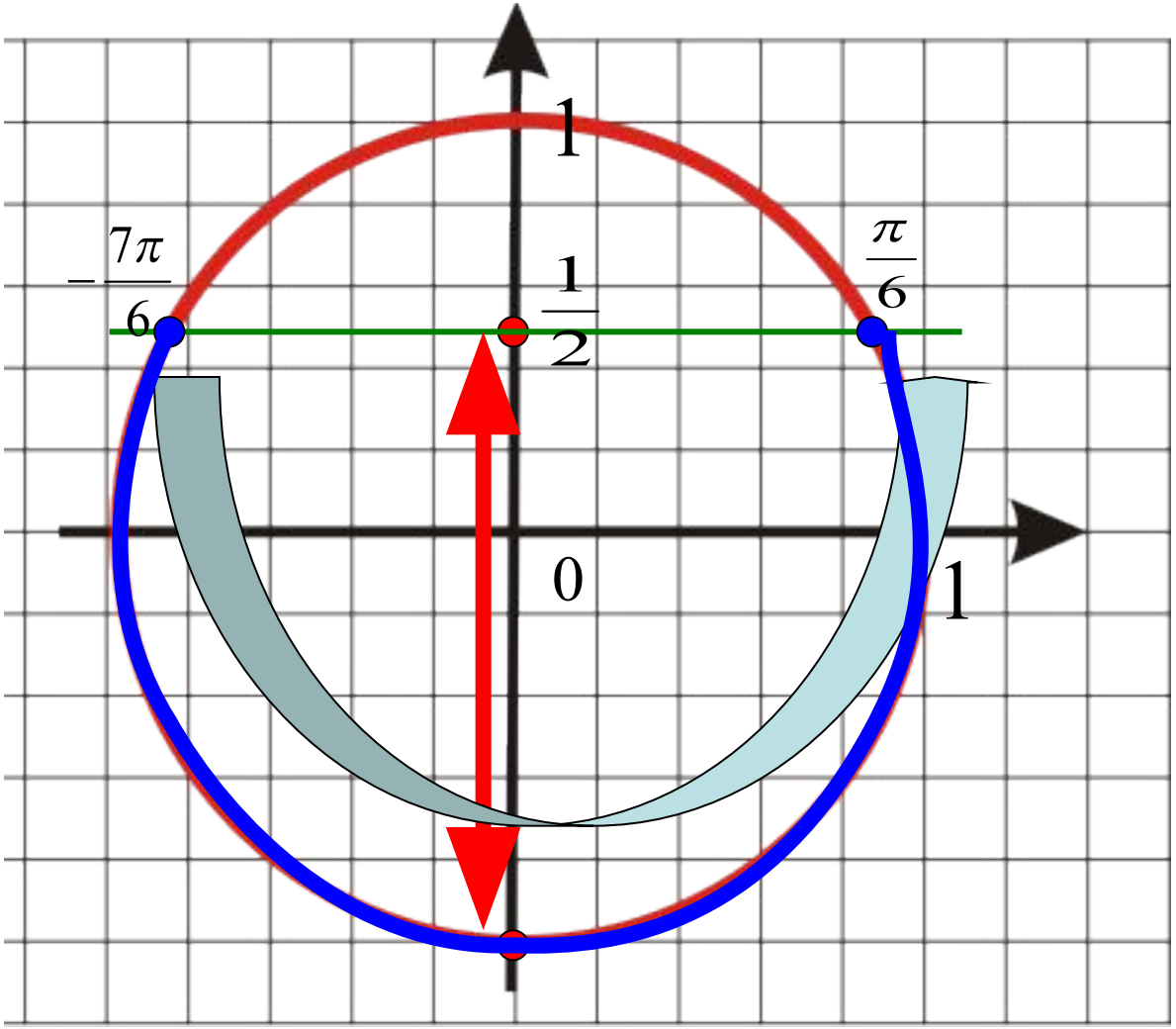


$$x = \left[\frac{\pi}{6} + 2\pi n; \frac{5\pi}{6} + 2\pi n\right], n \in Z$$

Рассмотрим неравенство :

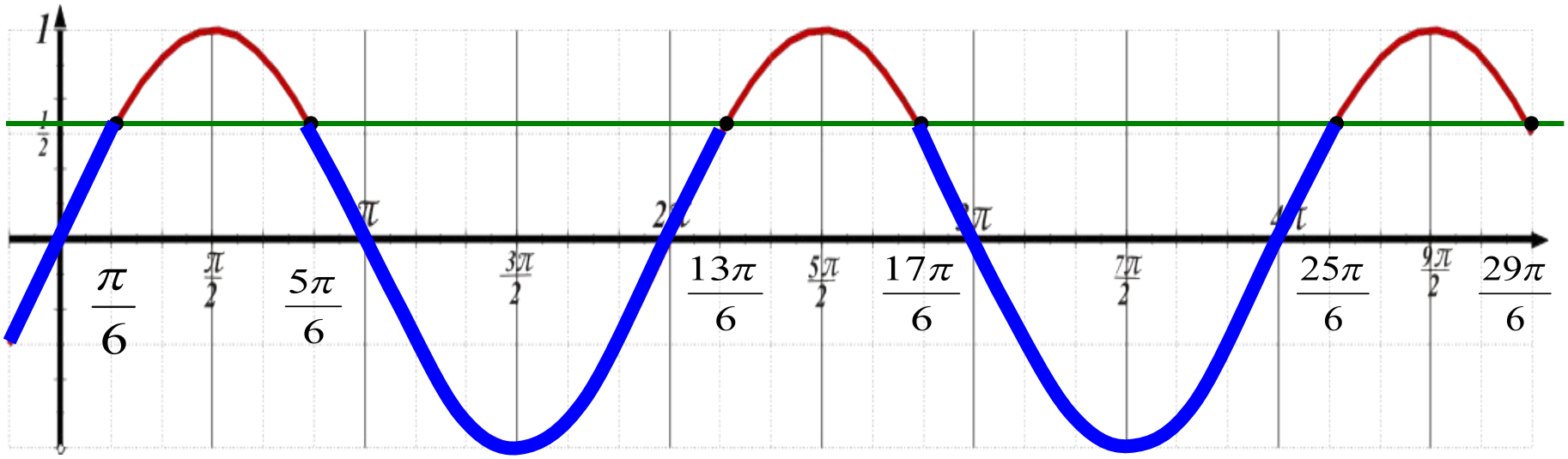
$$\sin x \leq \frac{1}{2}$$

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



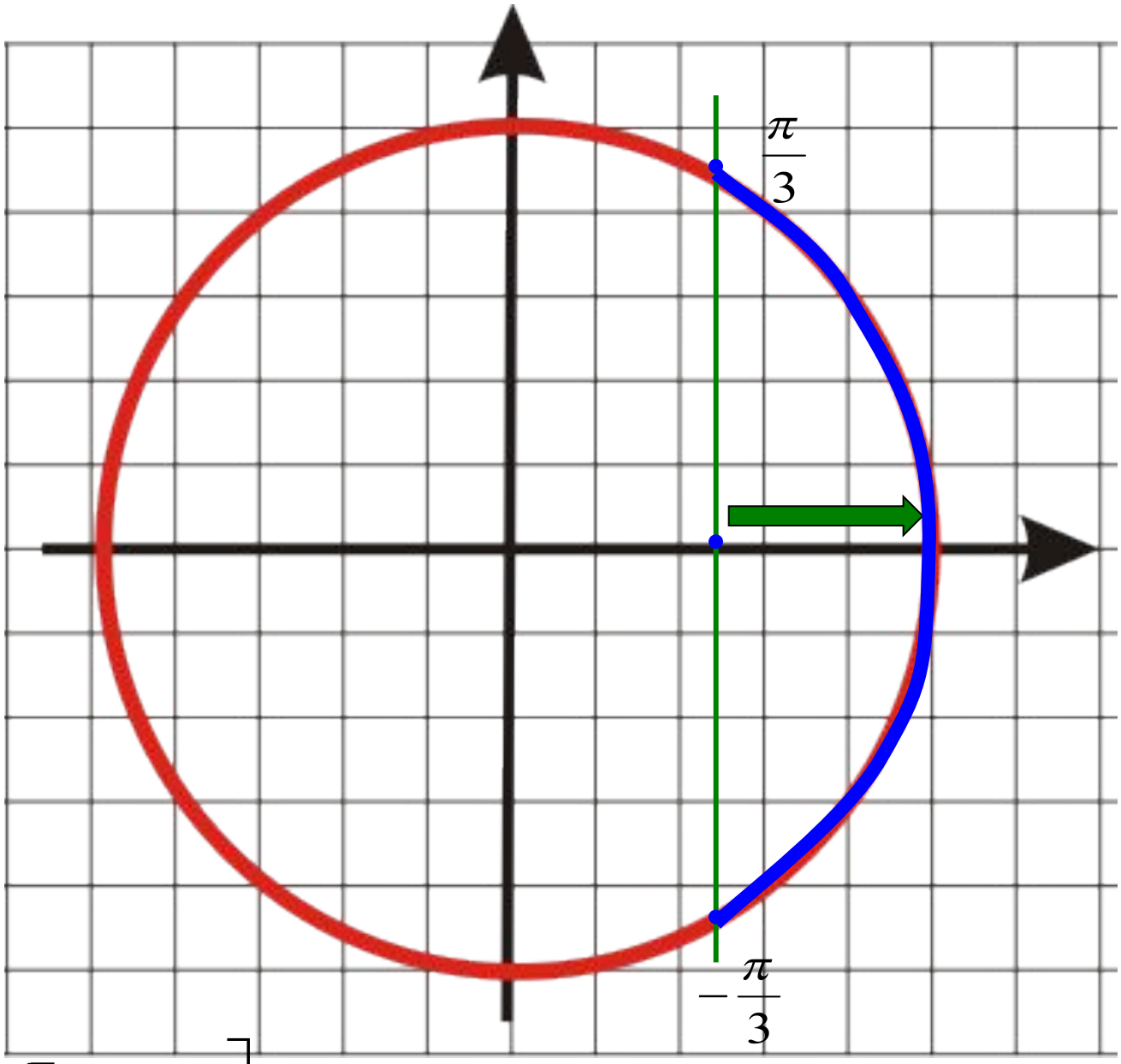
$$x = \left[-\frac{7\pi}{6} + 2\pi n; \frac{\pi}{6} + 2\pi n \right], n \in Z$$

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



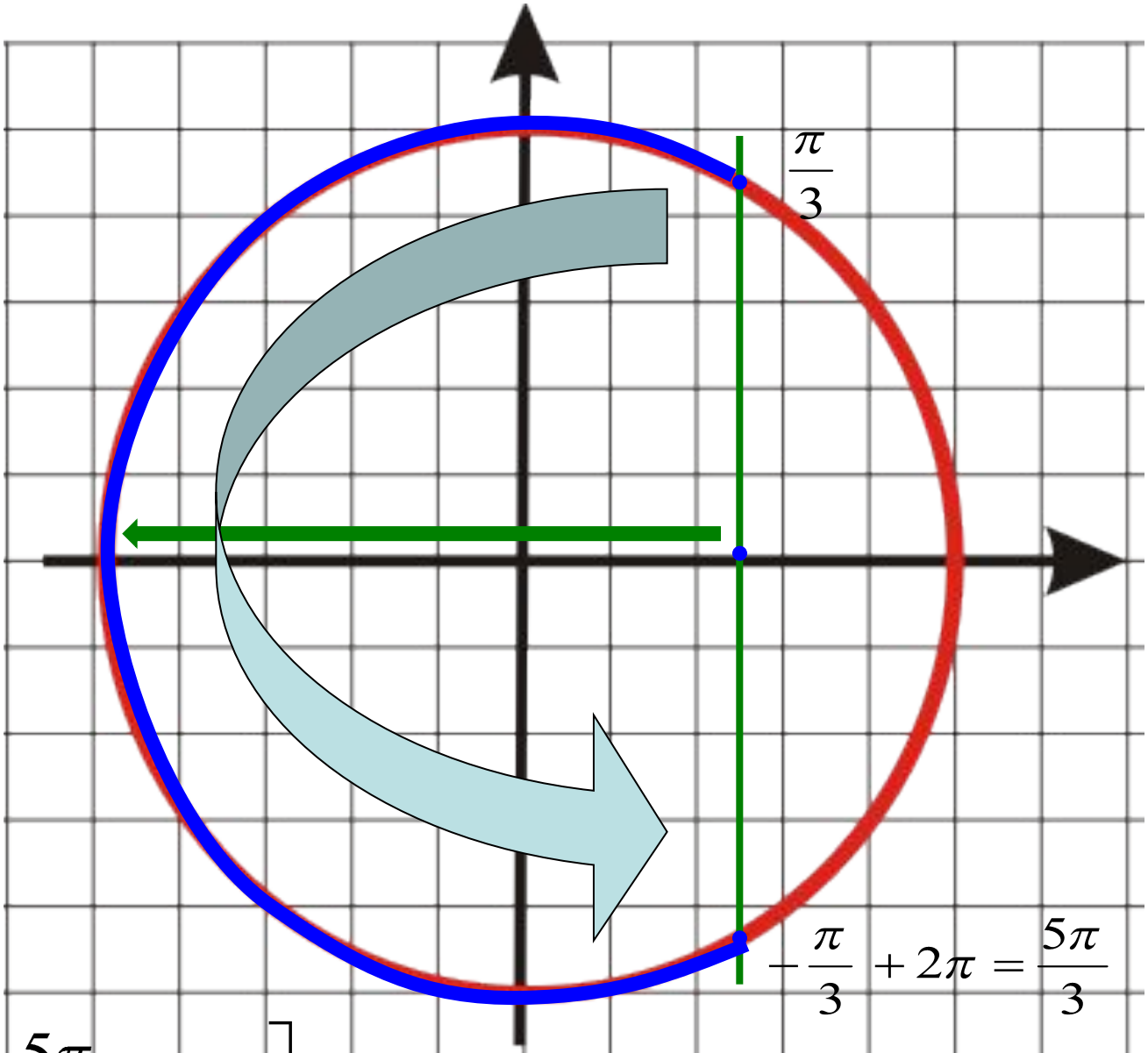
$$x = \left[-\frac{7\pi}{6} + 2\pi n; \frac{\pi}{6} + 2\pi n \right], n \in Z$$

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



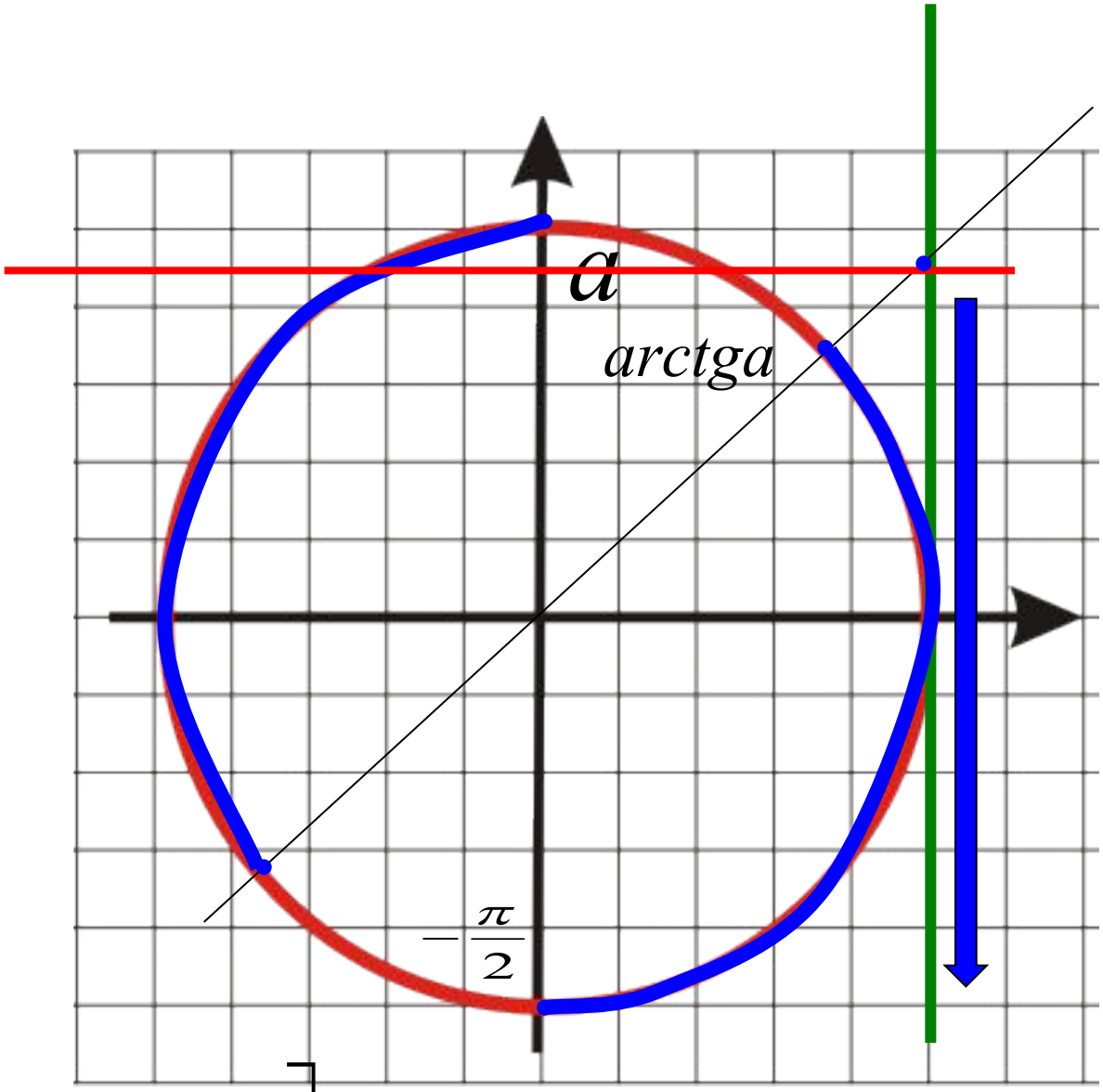
$$x = \left[-\frac{\pi}{3} + 2\pi n; \frac{\pi}{3} + 2\pi n \right], n \in Z$$

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



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

$$tgx \le a$$



$$x = \left(-\frac{\pi}{2} + \pi n; arctga + \pi n \right], n \in Z$$