

$$15) \log_{0,3} 10 - \log_{0,3} 3 =$$

$$= \log_{0,3} \frac{10}{3} = \log_{0,3} \left(\frac{3}{10}\right)^{-1} =$$

$$= -\log_{0,3} 0,3 = \boxed{-1}$$

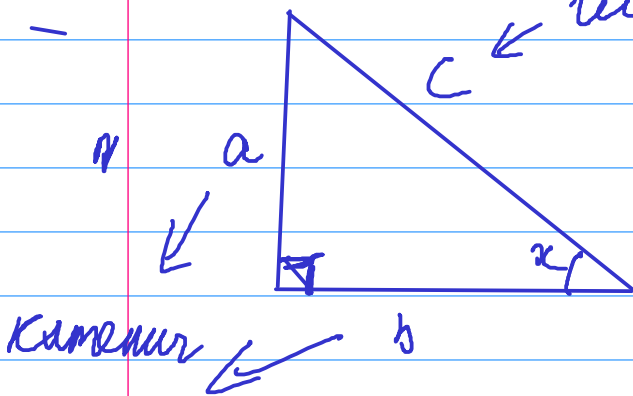
$$0,3 = \frac{3}{10}$$

$$\left(\frac{3}{10}\right)^{-1} = \frac{10}{3}$$

$$\left(\frac{10}{3}\right)^{-1} = \frac{3}{10}$$

Правильный
треугольник

Теорема Пифагора:
 $c^2 = a^2 + b^2$



$$\rightarrow \sin x = \frac{a}{c}$$

$$\rightarrow \cos x = \frac{b}{c}$$

$$\frac{\sin x}{\cos x} = \frac{a}{c} \cdot \frac{b}{c} =$$

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

$$\operatorname{tg} x = \frac{a}{b} = \frac{\sin x}{\cos x}$$

$$\operatorname{ctg} x = \frac{b}{a} = \frac{\cos x}{\sin x}$$

Основное тригонометрическое тождество:

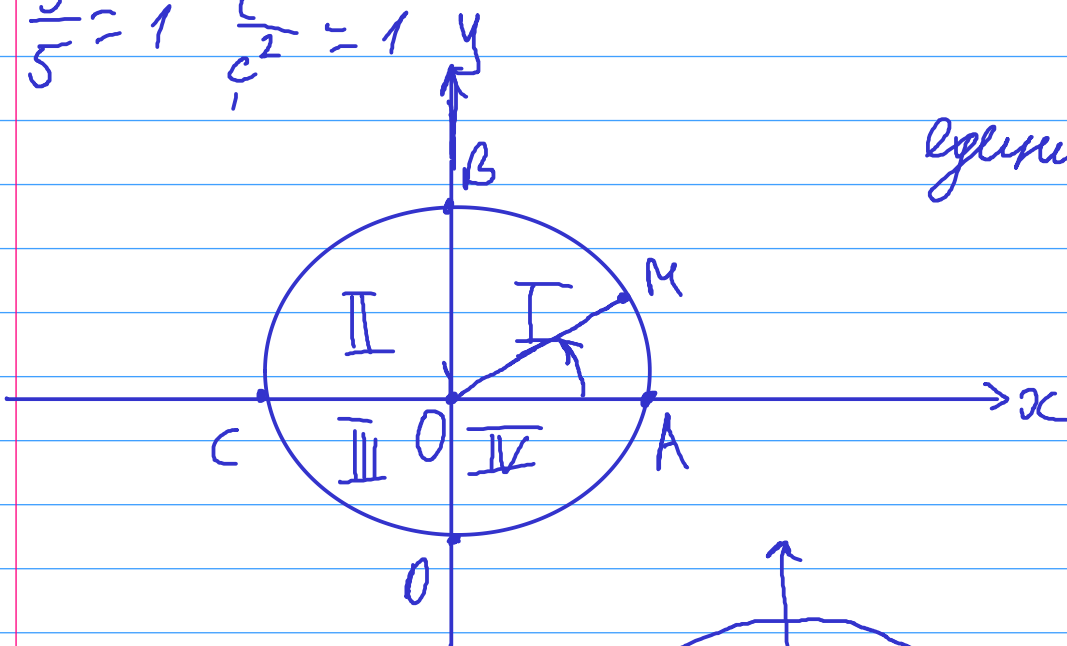
$$\boxed{\sin^2 x + \cos^2 x = 1}$$

D.G: $\sin x = \frac{a}{c}$ $\cos x = \frac{b}{c}$ π . ПИРАГОРА

$$\sin^2 x + \cos^2 x = \frac{a^2}{c^2} + \frac{b^2}{c^2} = \frac{a^2 + b^2}{c^2} \stackrel{\downarrow}{=} \frac{c^2}{c^2} = 1$$

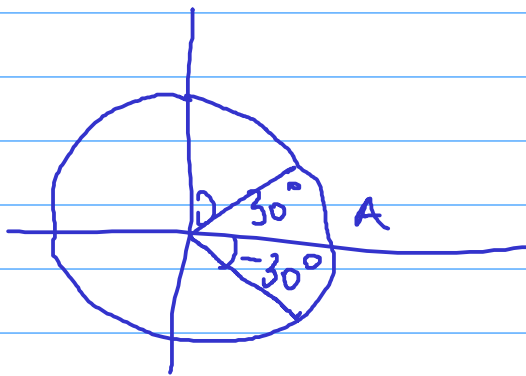
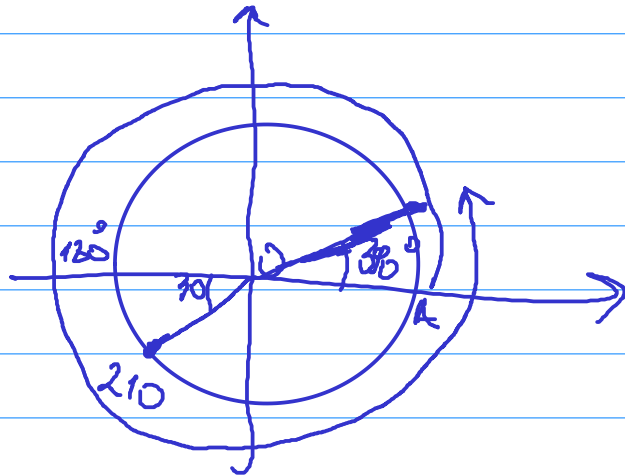
$$\frac{5}{5} = 1 \quad \frac{c^2}{c^2} = 1$$

Единична окръжност



$$\pi \sim 180^\circ$$

$$2\pi \sim 360^\circ$$



↑ - положителен ъгъл

↓ - отрицателен ъгъл

$$\frac{\pi}{2} = 90^\circ$$

$$\frac{\pi}{4} = 45^\circ$$

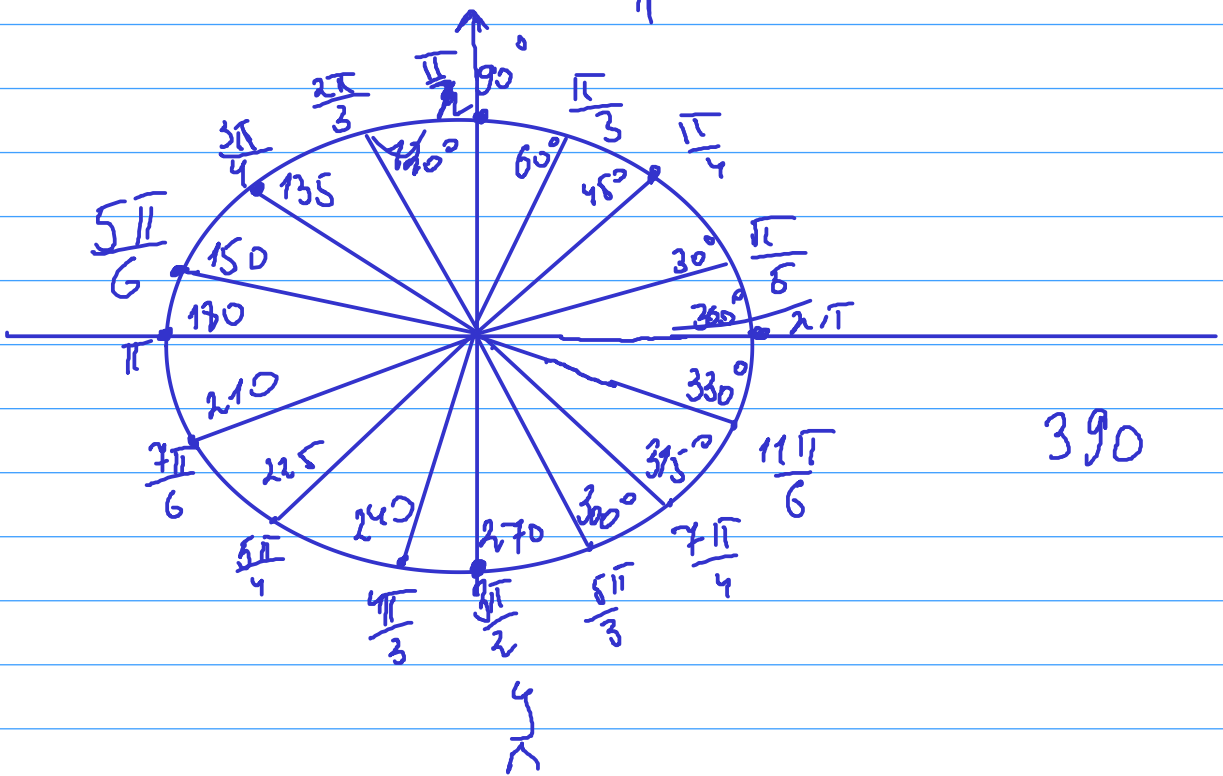
$$\frac{\pi}{3} = 60^\circ$$

$$\frac{\pi}{6} = 30^\circ$$

$$\pi \stackrel{?}{=} 180^\circ$$

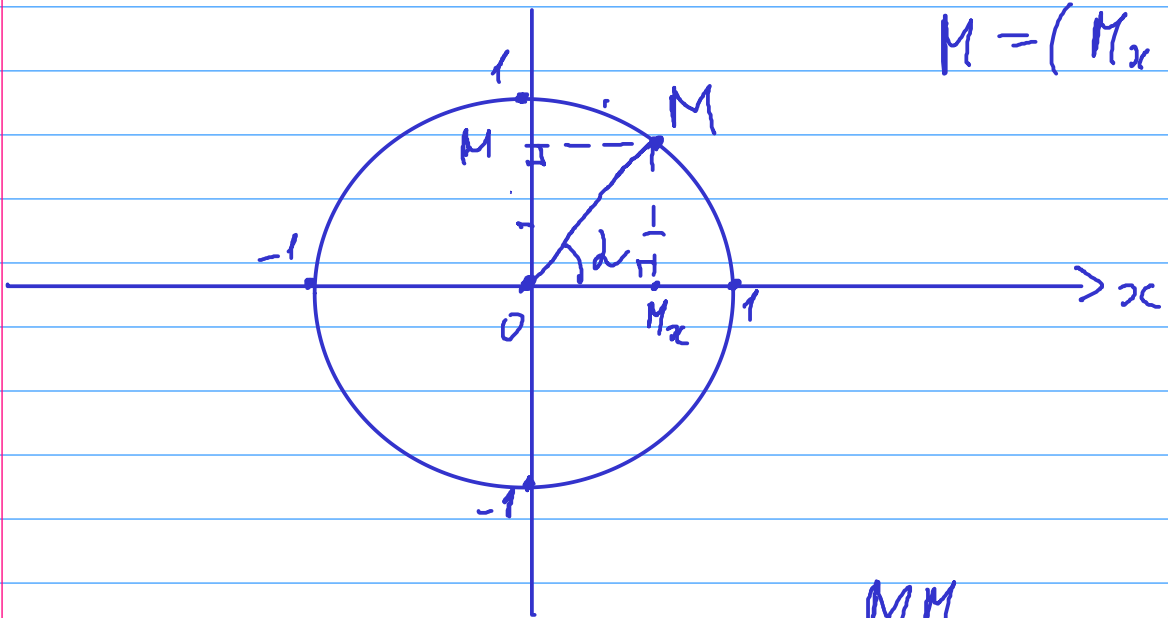
$$\frac{5\pi}{6} = \alpha^\circ$$

$$\alpha^\circ = \frac{5\pi}{6} \cdot 180 = \frac{5}{6} \cdot 180 = 150^\circ$$



390

$$M = (M_x, M_y)$$

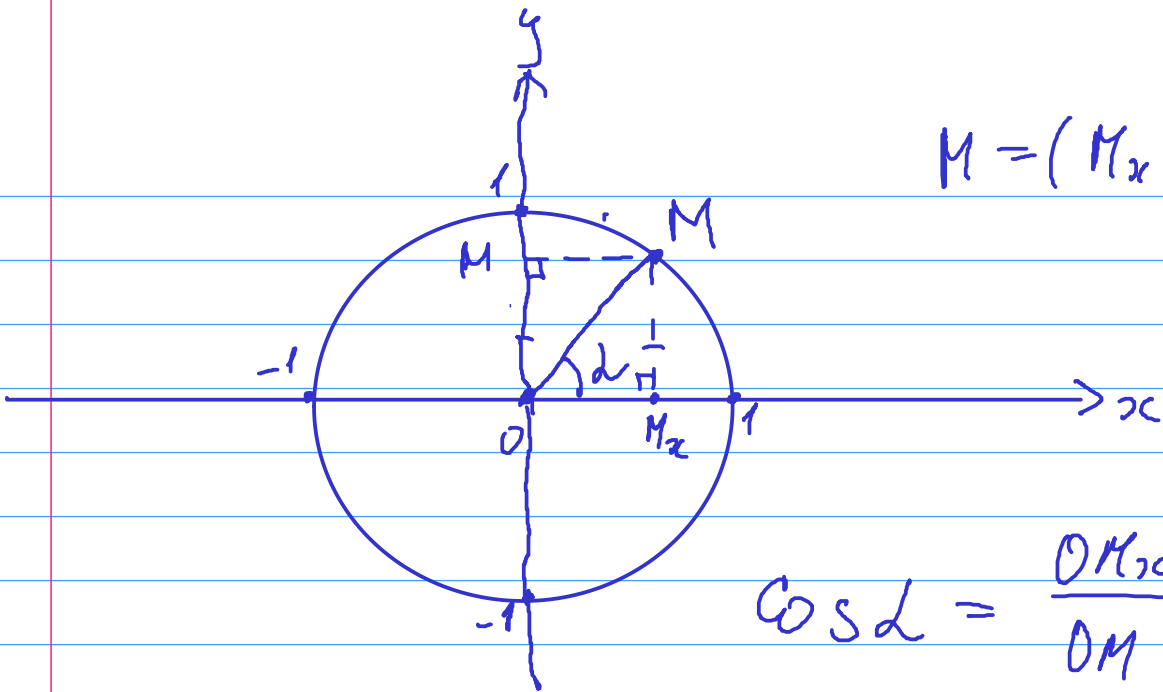


показ. $\Delta M O M_x \quad \sin \alpha = \frac{M M_x}{O M} = M M_x$

$$M M_x = O M_y$$

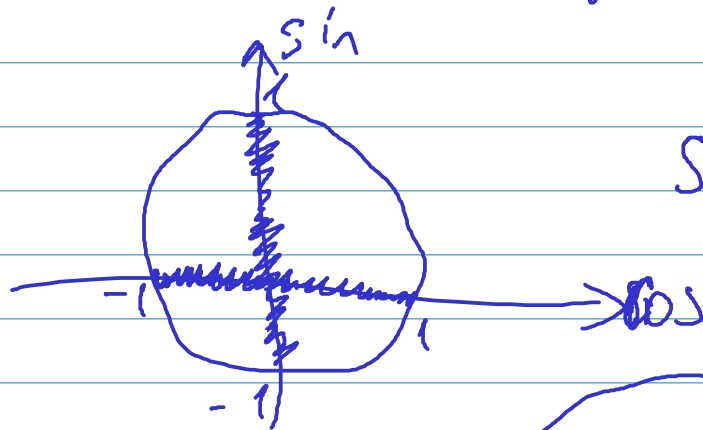
т.е. $\sin \alpha$ haben entsprechende сторона M_y по y

$$M = (M_x, M_y)$$



$$\cos \alpha = \frac{OM_x}{OM} = OM_x$$

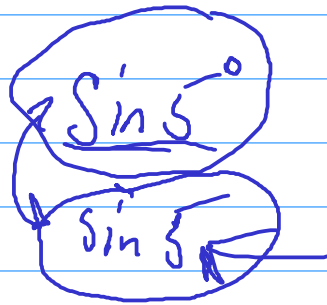
m.e. $\cos \alpha$ haben entsprechende M no von x



$$\sin \alpha, \cos \alpha \in [-1, 1]$$

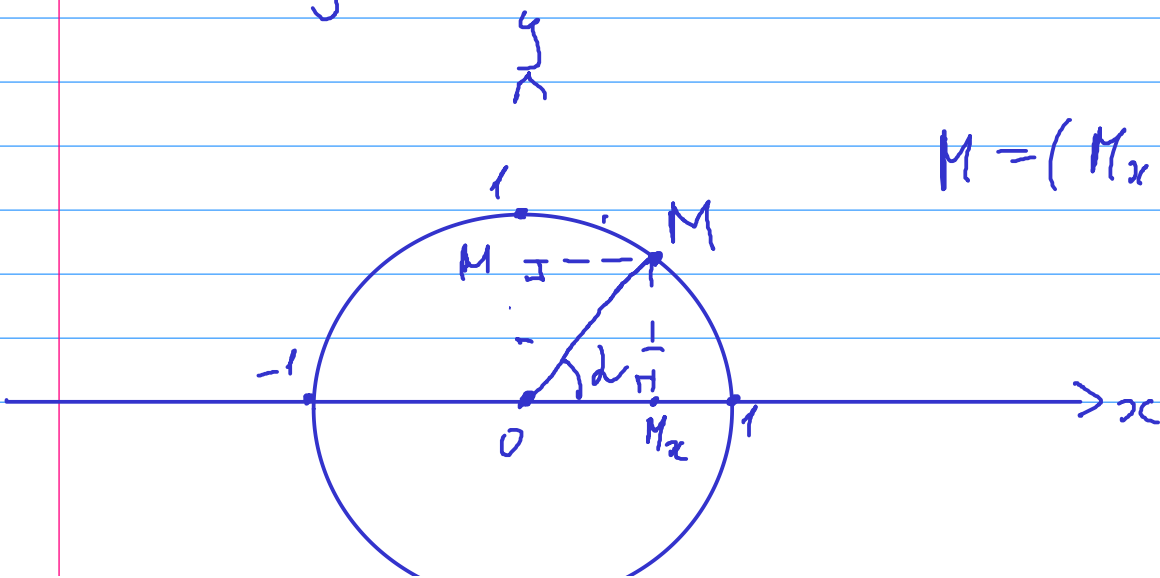
$$\pi \approx 3,14$$

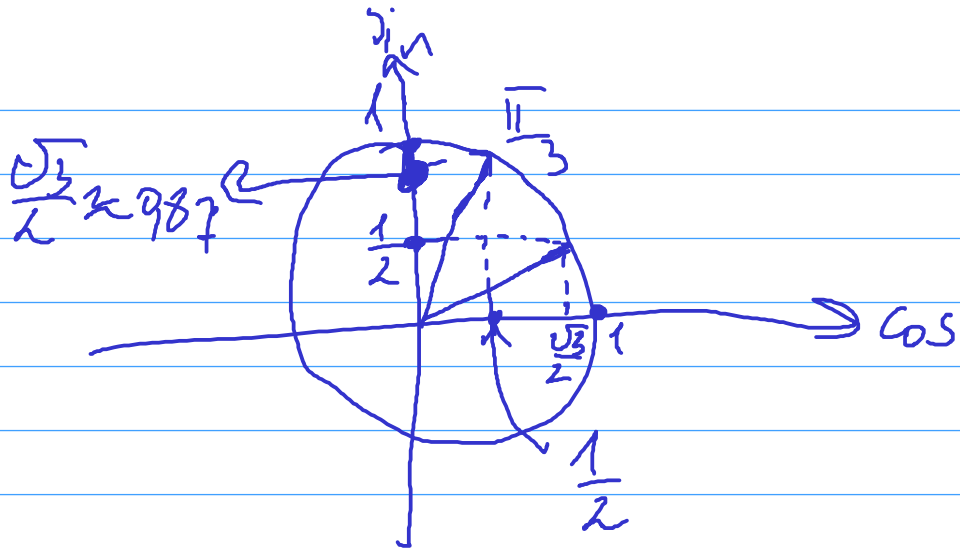
$$\frac{4}{3\pi}$$



$$\frac{2\pi}{5} \approx 6,28 \dots$$

$$M = (M_x, M_y)$$





$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

$$\cos \frac{\pi}{3} = \frac{1}{2}$$

~~$\frac{\sqrt{3}}{2} \approx 0,87$~~

		$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
		30	45	60	90
Sin	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tg	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	не чис
ctg	не чис	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0

Диз:
 значения от
 0 до 90