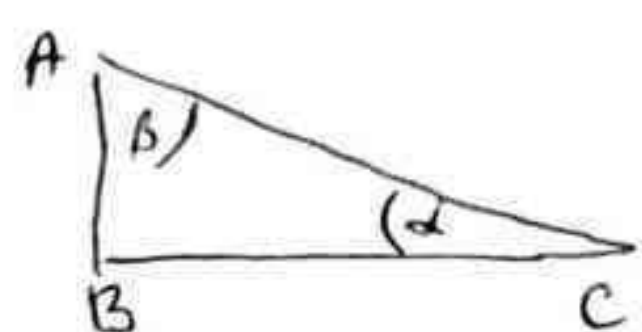


ТРИГОНОМЕТРИЈСКЕ ФУНКЦИЈЕ ОШТРОГ УГЛА



$$\left. \begin{aligned} \sin \alpha &= \frac{AB}{AC} & \cos \beta &= \frac{AB}{AC} \\ \sin \beta &= \frac{BC}{AC} & \cos \alpha &= \frac{BC}{AC} \end{aligned} \right\} \Rightarrow \begin{aligned} \sin \beta &= \cos \alpha \\ \cos \beta &= \sin \alpha \end{aligned}$$

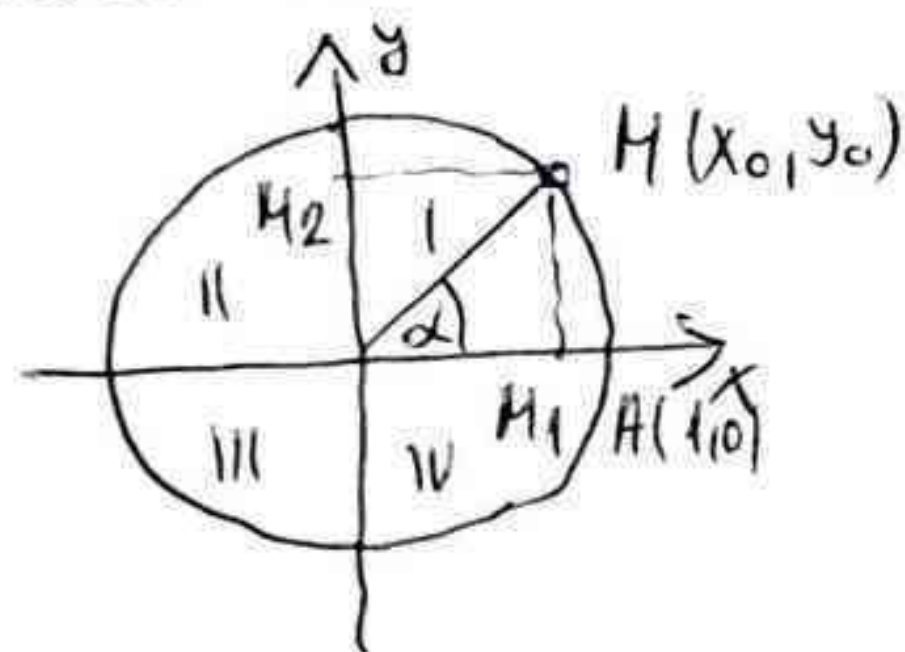
$$\begin{aligned} \operatorname{tg} \alpha &= \frac{\sin \alpha}{\cos \alpha} \\ \operatorname{ctg} \alpha &= \frac{\cos \alpha}{\sin \alpha} \end{aligned}$$

$$\begin{aligned} 180^\circ &= \pi \cdot \text{rad} \\ 1^\circ &= \left(\frac{\pi}{180}\right) \text{rad} \approx 0,017453 \text{rad} \\ 1 \text{rad} &= \left(\frac{180}{\pi}\right)^\circ = 57^\circ 17' 45'' \end{aligned}$$

$$\begin{aligned} x^\circ &= \left(\frac{\pi}{180} x\right) \text{rad} \\ x \text{rad} &= \left(\frac{180}{\pi} x\right)^\circ \end{aligned}$$

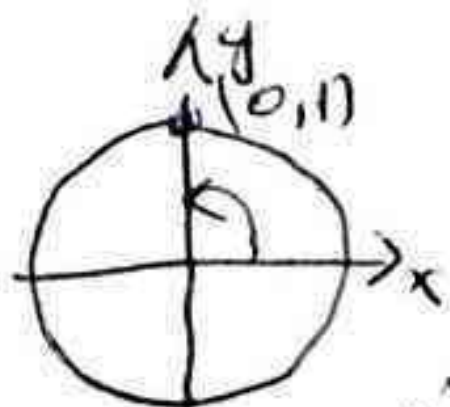
$$\begin{aligned} \sin^2 \alpha + \cos^2 \alpha &= 1 \\ \operatorname{tg} \alpha \cdot \operatorname{ctg} \alpha &= 1 \end{aligned}$$

ТРИГОНОМЕТРИЈСКИ КРУГ

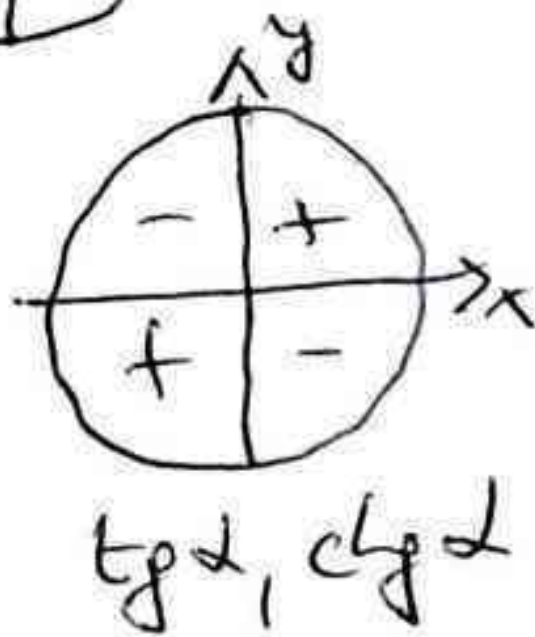
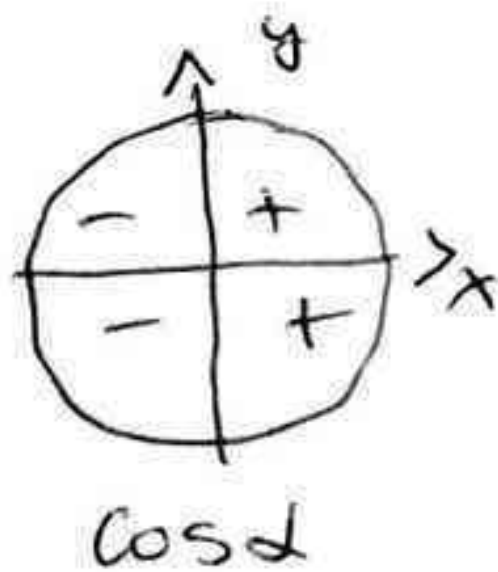
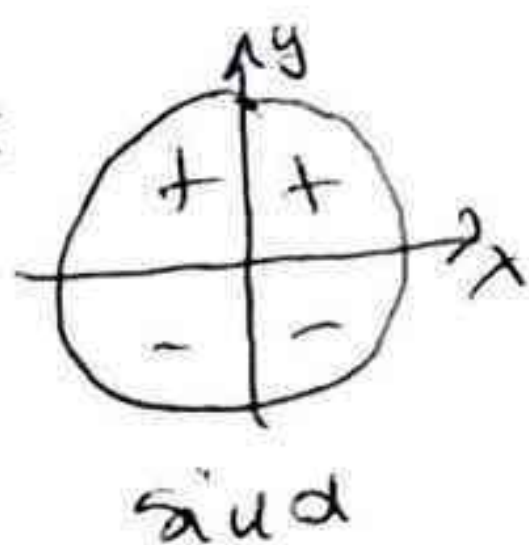


$$\left. \begin{aligned} \cos \alpha &= OM_1 = x_0 \\ \sin \alpha &= OM_2 = y_0 \end{aligned} \right\} M(\cos \alpha, \sin \alpha)$$

нр. $\alpha = \frac{\pi}{2}$; $\cos \frac{\pi}{2} = 0$; $\sin \frac{\pi}{2} = 1$



ЗНАК:



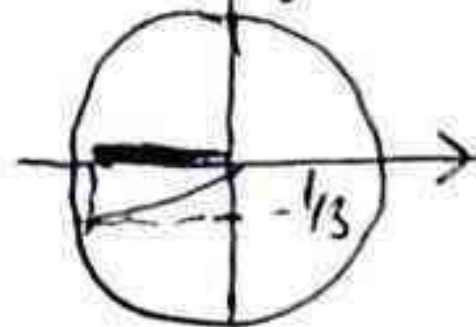
594. a) $\sin \alpha = -\frac{1}{3}$; $\pi < \alpha < \frac{3\pi}{2}$

$$\cos \alpha = \sqrt{1 - \sin^2 \alpha} = \sqrt{1 - \frac{1}{9}} = \sqrt{\frac{8}{9}}$$

$$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\sqrt{2}}{4}$$

$$\operatorname{ctg} \alpha = 2\sqrt{2}$$

$$\cos \alpha = \pm \frac{2\sqrt{2}}{3}$$



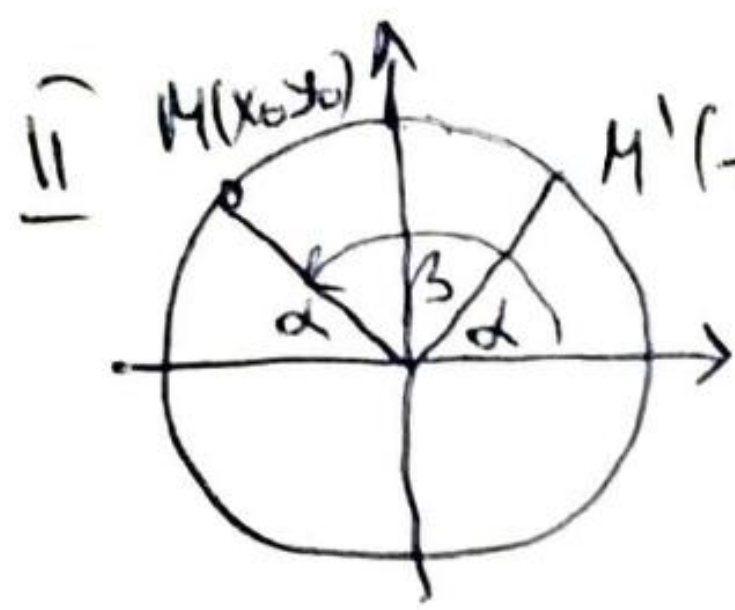
$$\cos \alpha = -\frac{2\sqrt{2}}{3}$$

595. a) $\sin \alpha = \frac{12}{13}$; $0 < \alpha < \frac{\pi}{2}$

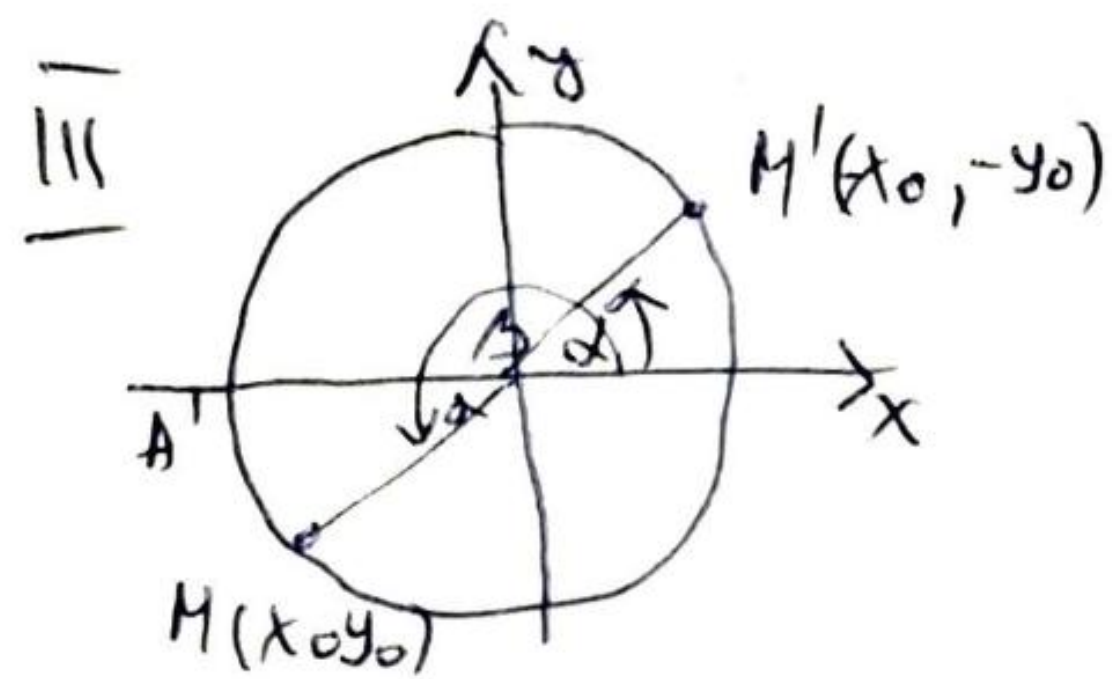
$$\cos \alpha = \sqrt{1 - \frac{144}{169}} = \frac{5}{13} \Rightarrow \cos \alpha = \frac{5}{13}$$

$$\operatorname{tg} \alpha = \frac{12}{5} , \operatorname{ctg} \alpha = \frac{5}{12}$$

СВОЙСТВА НА I КВАДРАНТ



$$\begin{aligned} \cos \beta &= x_0 = -x_0 = -\cos \alpha \\ \sin \beta &= y_0 = \sin \alpha \\ \cos(\pi - \alpha) &= -\cos \alpha & \operatorname{tg}(\pi - \alpha) &= -\operatorname{tg} \alpha \\ \sin(\pi - \alpha) &= \sin \alpha & \operatorname{ctg}(\pi - \alpha) &= -\operatorname{ctg} \alpha \end{aligned}$$



$$\begin{aligned} \cos \beta &= x_0 = -x_0 = -\cos \alpha \\ \sin \beta &= y_0 = -y_0 = -\sin \alpha \\ \cos(\pi + \alpha) &= -\cos \alpha & \operatorname{tg}(\pi + \alpha) &= \operatorname{tg} \alpha \\ \sin(\pi + \alpha) &= -\sin \alpha & \operatorname{ctg}(\pi + \alpha) &= \operatorname{ctg} \alpha \end{aligned}$$

ЗАДАЧА:

$$\cos \frac{3\pi}{4} = \cos \left(\pi - \frac{\pi}{4} \right) = -\cos \frac{\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$\sin \frac{5\pi}{6} = \sin \left(\pi - \frac{\pi}{6} \right) = \sin \frac{\pi}{6} = \frac{1}{2}$$

$$\operatorname{tg} 210^\circ = \operatorname{tg} (180^\circ + 30^\circ) = \operatorname{tg} 30^\circ = \frac{\sqrt{3}}{3}$$

ДОКАЗУ:

$$\cos 120^\circ = -\frac{1}{2}$$

$$\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$\sin \frac{11\pi}{6} = -\frac{1}{2}$$

$$\cos \left(-\frac{\pi}{6} \right) = \frac{\sqrt{3}}{2}$$