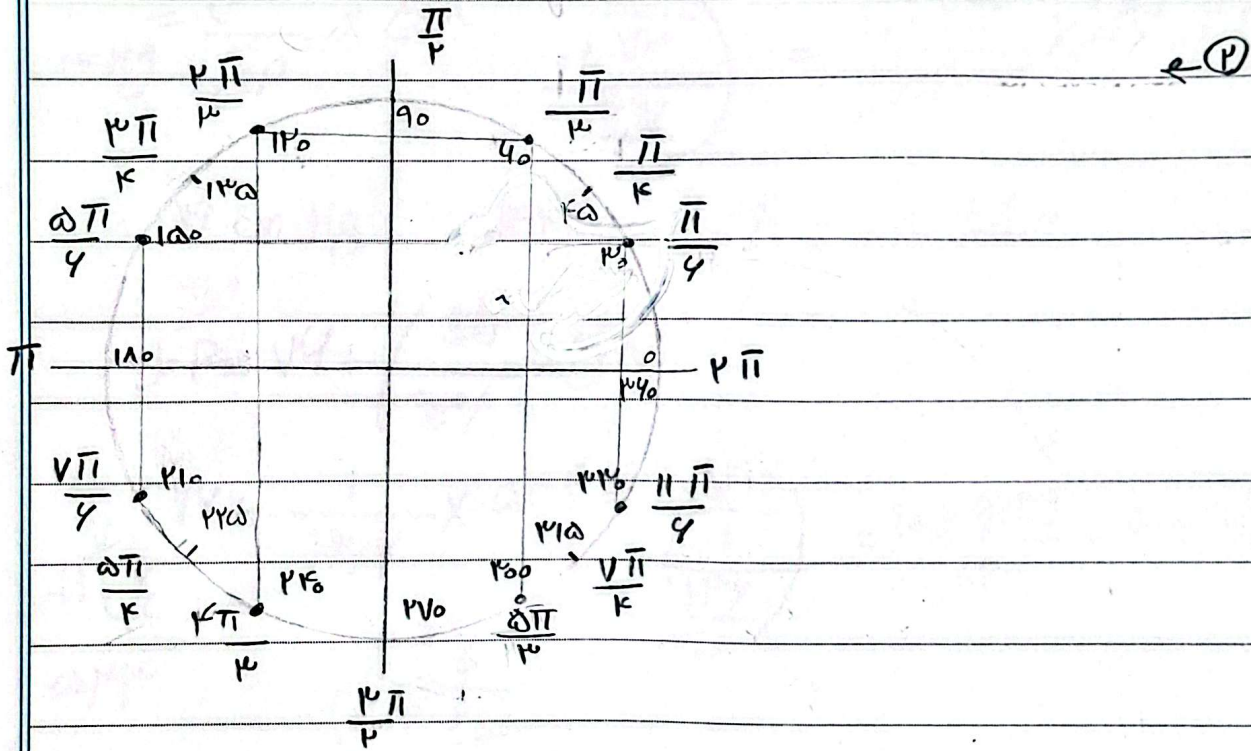
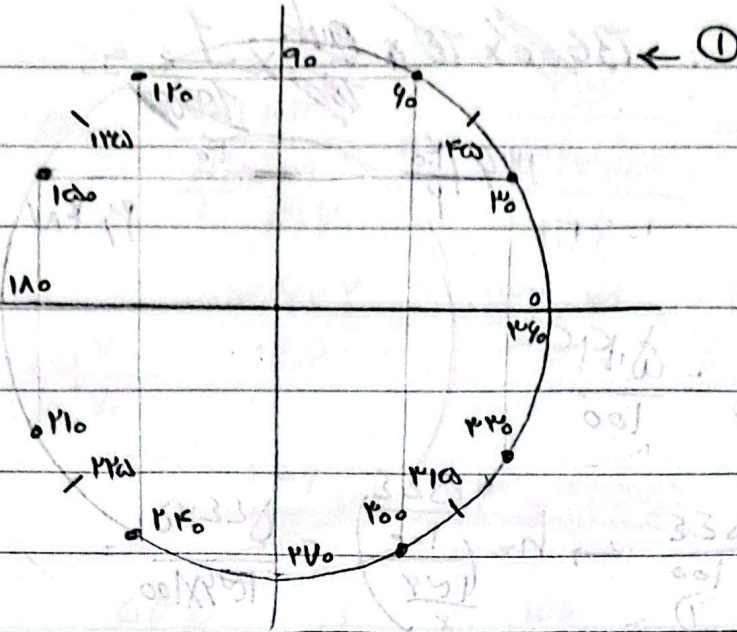


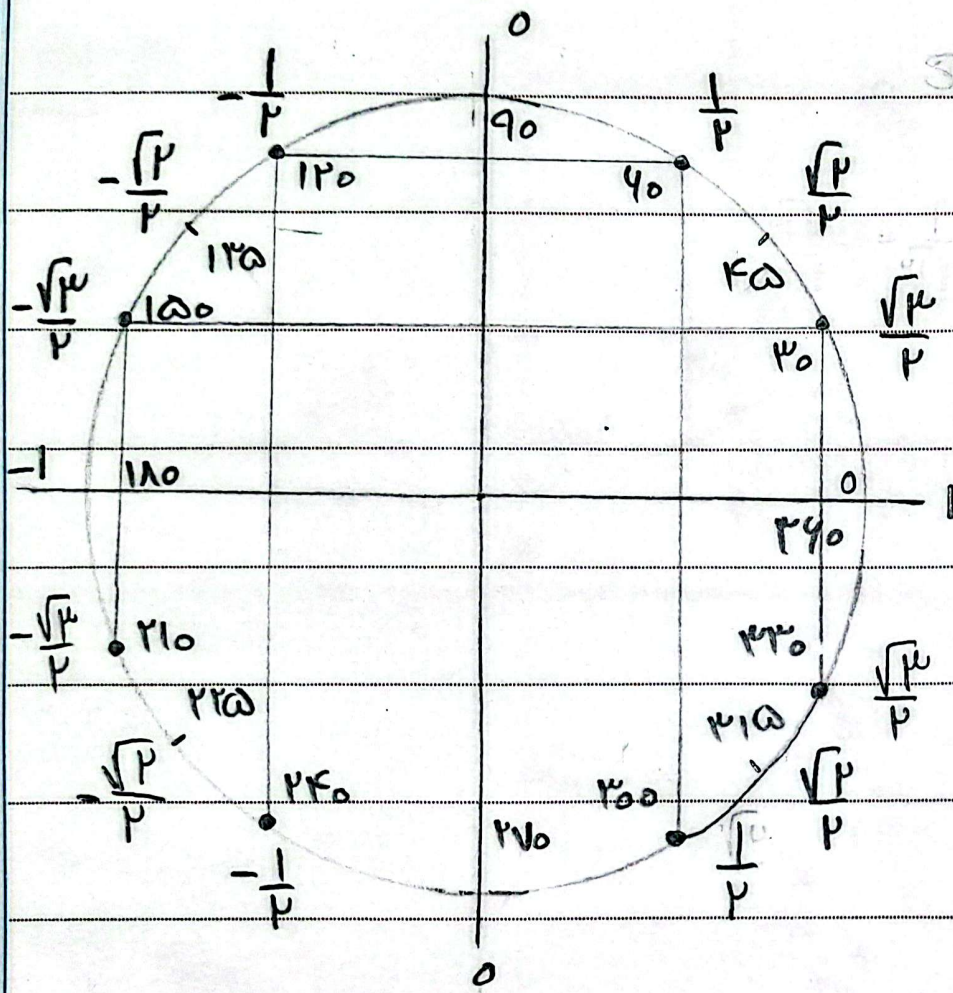
نرخ اسلانی نژاد

تدوین شده

دهم، پنجشنبه دهم ۹۵۷



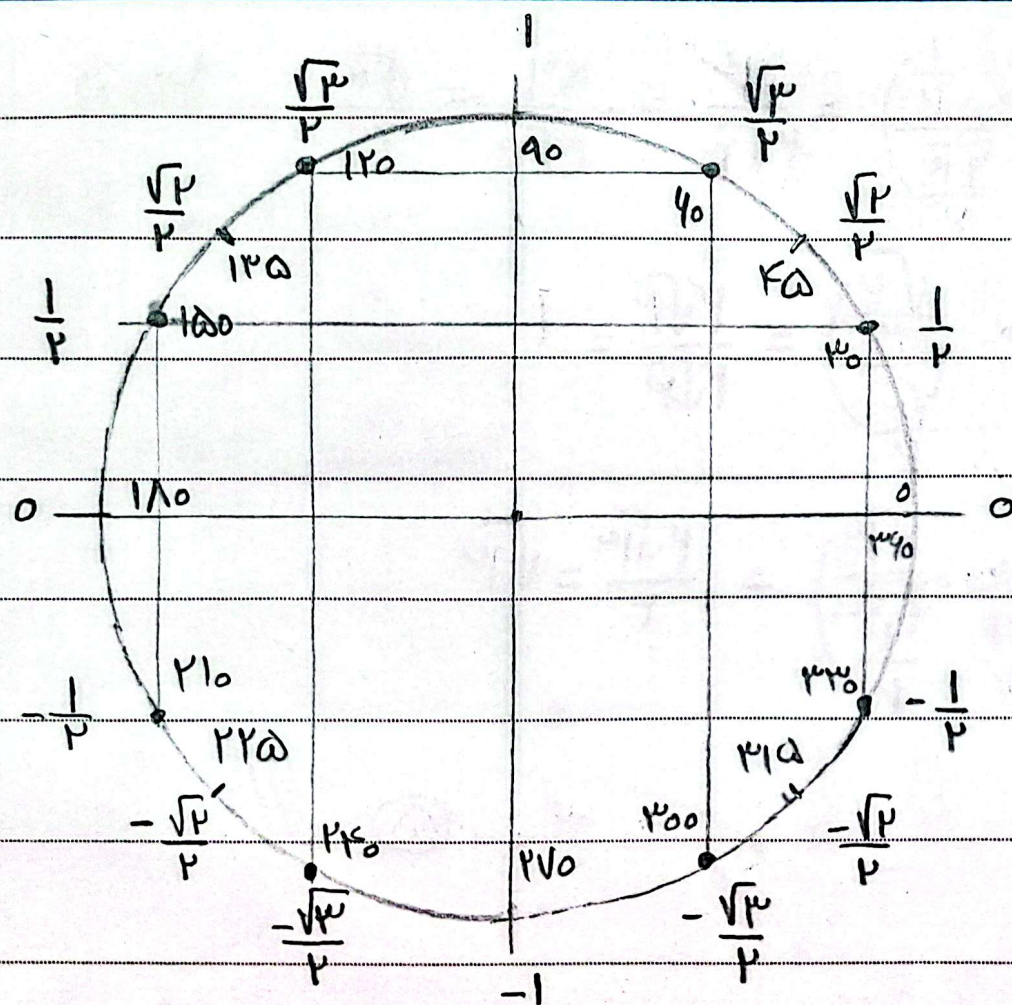
Scanned with



$\cos \rightarrow x$

$\leftarrow y$

نردیس اصلاحی نرد



sin → y

← (K)

نویس اسلای نرادر

$$\tan \rightarrow \frac{\sin}{\cos} = \frac{y}{x} \quad \text{و} \quad \sec \rightarrow \left(\frac{1}{\cos} \right) = \frac{r}{x} = \frac{1}{\cos} = \frac{r}{x}$$

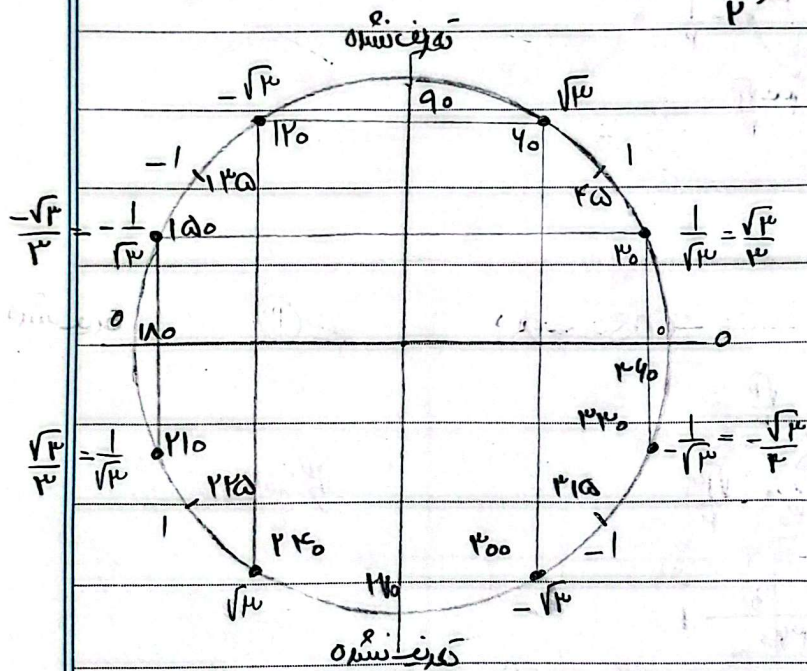
$$90 \rightarrow \frac{1}{0} = \text{تعریف نشده}$$

$$0, 180 \rightarrow \frac{0}{\pm 1} = 0$$

$$180 \rightarrow \frac{0}{-1} = 0 \quad \text{و} \quad \sec \rightarrow \frac{1}{0} = \text{تعریف نشده}$$

$$\sec \rightarrow \left(\frac{r}{\cos} \right) = \frac{r}{\frac{r}{\sec}} = 1$$

$$90 \rightarrow \left(\frac{r}{\frac{r}{\sec}} \right) = \frac{r \sec}{r} = \sec$$



نکته: اصل این دایره

$$\cot = \frac{\cos}{\sin} = \frac{x}{y}$$

$$K_0 \rightarrow \left(\frac{\sqrt{K}}{\frac{1}{\sqrt{K}}} \right) = \frac{\sqrt{K}}{\frac{1}{\sqrt{K}}} = \sqrt{K}$$

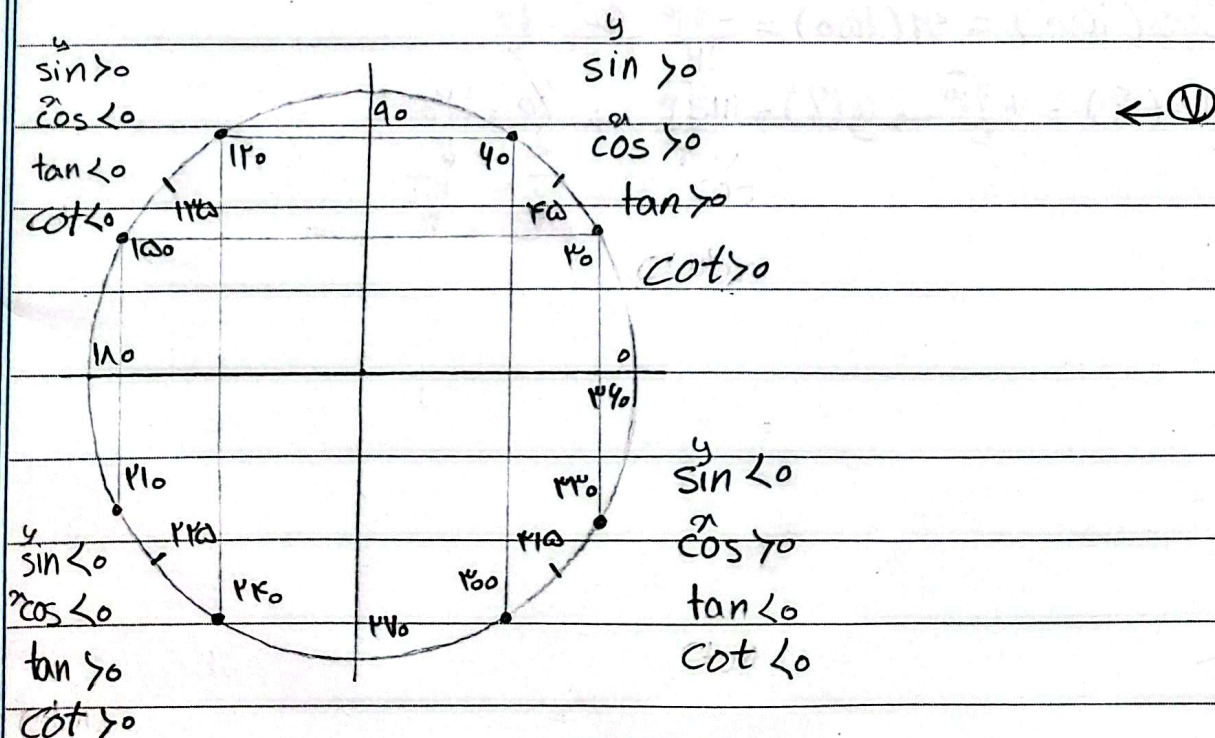
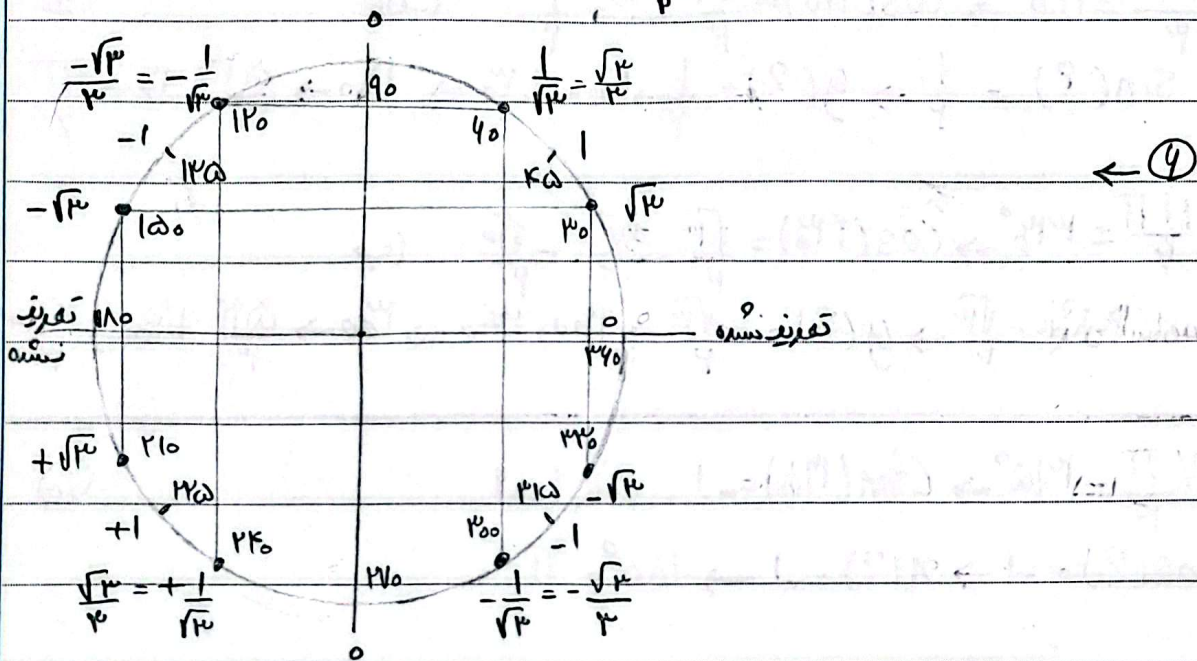
$$K_{90} \rightarrow \frac{0}{1} = 0$$

$$K_{180} \rightarrow \frac{-1}{0} = \text{تعریف نشده}$$

$$K_{270} \rightarrow \left(\frac{\frac{1}{\sqrt{K}}}{\sqrt{K}} \right) = \frac{K}{K} = 1$$

$$K_{360} \rightarrow \frac{1}{0} = \text{تعریف نشده}$$

$$K_0 \rightarrow \left(\frac{\frac{1}{\sqrt{K}}}{\sqrt{K}} \right) = \frac{K}{K} = \frac{1}{\sqrt{K}}$$



$$\sin \rightarrow y \rightarrow y(120^\circ) = \frac{\sqrt{3}}{2} \quad 120^\circ = \frac{2\pi}{3} \quad \text{الف} \quad (1)$$

$$\cos \rightarrow x \rightarrow x(120^\circ) = -\frac{\sqrt{3}}{2} \quad 120^\circ = \frac{2\pi}{3} \quad \text{ب}$$

$$\tan \rightarrow \frac{\sin}{\cos} \rightarrow \tan(120^\circ) = \frac{1}{-\sqrt{3}} \quad 120^\circ = \frac{2\pi}{3} \quad \text{ج}$$

$$\cot \rightarrow \frac{\cos}{\sin} \rightarrow \cot(120^\circ) = -1 \quad 120^\circ = \frac{2\pi}{3} \quad \text{د}$$

$$\frac{2\pi}{3} = 120^\circ \rightarrow \cos(120^\circ) = -\frac{1}{2} \xrightarrow{\text{قرینه}} \frac{1}{2} \quad \text{الف} \quad (2)$$

$$\sin(?) = \frac{1}{2} \rightarrow y(?) = \frac{1}{2} \rightarrow 30^\circ, 150^\circ \rightarrow 30^\circ \rightarrow \frac{\pi}{6}, 150^\circ \rightarrow \frac{5\pi}{6}$$

$$\frac{11\pi}{6} = 330^\circ \rightarrow \cos(330^\circ) = \frac{\sqrt{3}}{2} \xrightarrow{\text{قرینه}} -\frac{\sqrt{3}}{2} \quad \text{ب}$$

$$\sin(?) = -\frac{\sqrt{3}}{2} \rightarrow y(?) = -\frac{\sqrt{3}}{2} \rightarrow 240^\circ, 300^\circ \rightarrow 240^\circ \rightarrow \frac{4\pi}{3}, 300^\circ \rightarrow \frac{5\pi}{2}$$

$$\frac{7\pi}{6} = 210^\circ \rightarrow \tan(210^\circ) = -\frac{1}{\sqrt{3}} \quad \text{الف} \quad (3)$$

$$\cos(?) = -1 \rightarrow x(?) = -1 \rightarrow 180^\circ = \pi$$

$$\cos(120^\circ) = x(120^\circ) = -\frac{\sqrt{3}}{2} \xrightarrow{\text{قرینه}} \frac{\sqrt{3}}{2}$$

$$\sin(?) = +\frac{\sqrt{3}}{2} \rightarrow y(?) = \frac{\sqrt{3}}{2} \rightarrow 60^\circ, 120^\circ$$

$\downarrow$
 $\frac{\pi}{3}$

$\downarrow$
 $\frac{2\pi}{3}$