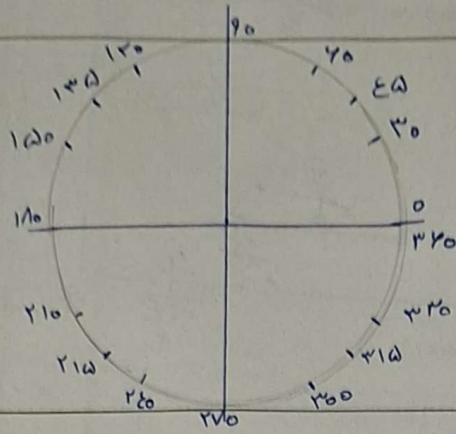


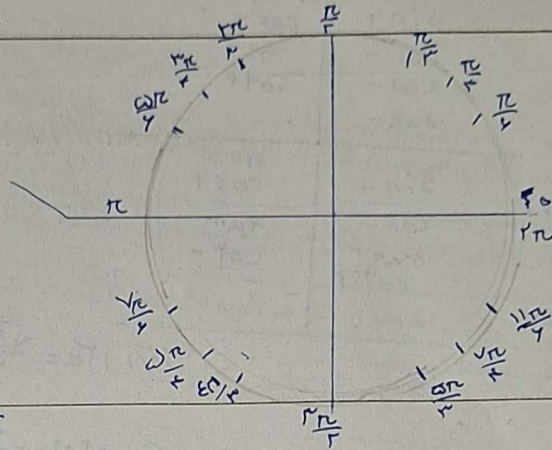
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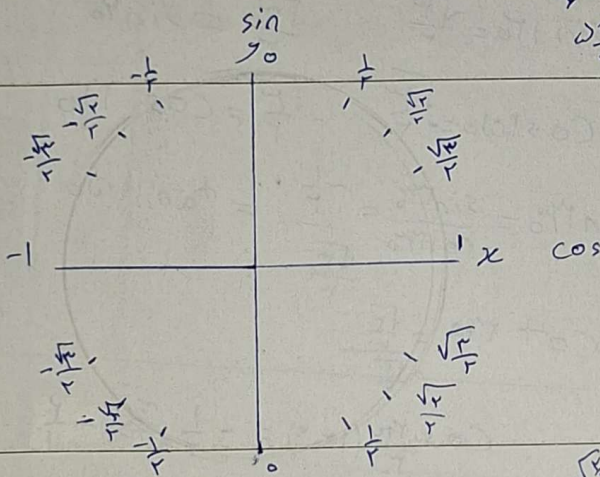
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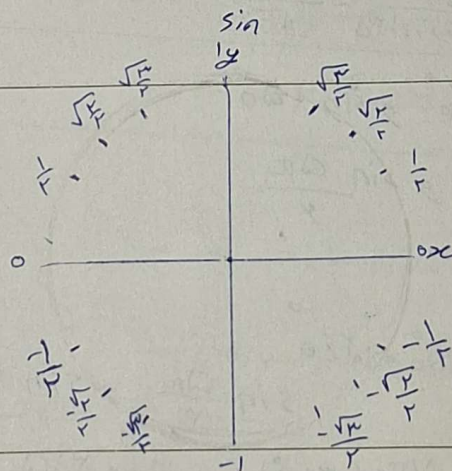
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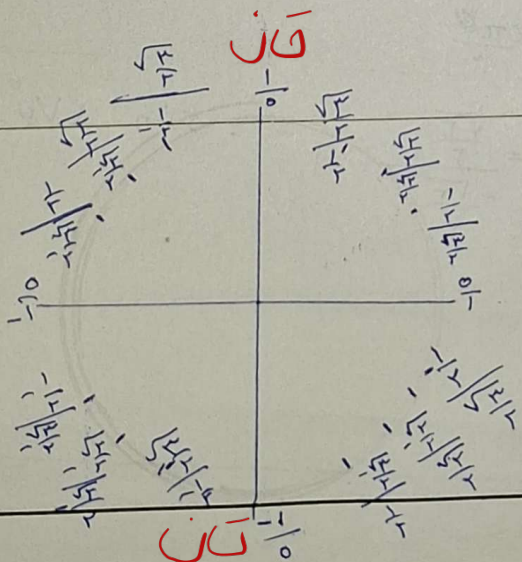
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$$\tan = \frac{\sin}{\cos}$$

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

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1, 2

$\sin +$ $\cos -$ $\cot -$ $\tan -$	$\sin +$ $\cos +$ $\tan +$ $\cot +$
$\sin -$ $\cos -$ $\tan +$ $\cot +$	$\sin -$ $\cos +$ $\tan -$ $\cot -$

3

7

$$\sin 120^\circ = \frac{\sqrt{3}}{2} \quad \frac{\sqrt{3}}{2} = \sin 60^\circ \quad (الف)$$

$$\cos 120^\circ = -\frac{1}{2} \quad -\frac{1}{2} = \cos 240^\circ \quad (ب)$$

$$\tan 120^\circ = \frac{\sin 120^\circ}{\cos 120^\circ} = \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\sqrt{3} = \tan 240^\circ \quad (ج)$$

8

$$\cot 120^\circ = \frac{\cos 120^\circ}{\sin 120^\circ} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = \cot 240^\circ \quad (د)$$

5

$$\frac{1}{2} = \sin 30^\circ \text{ و } \sin 150^\circ \quad \cos \frac{2\pi}{3} (120^\circ) = -\frac{1}{2} \rightarrow -\frac{1}{2} \quad (الف)$$

$$\sin \frac{\pi}{4} \text{ و } \sin \frac{3\pi}{4}$$

$$\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2} \rightarrow \frac{\sqrt{3}}{2} \quad (ب)$$

9

5

$$\frac{\sqrt{3}}{2} = \sin 60^\circ \text{ و } \sin 120^\circ \quad \sin \frac{4\pi}{3} \text{ و } \sin \frac{5\pi}{3}$$

$$\cot \frac{5\pi}{6} (150^\circ) = \frac{\cos 150^\circ}{\sin 150^\circ} = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\sqrt{3}$$

$$\sin 150^\circ \quad (الف)$$

10

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

$$\sin 120^\circ \text{ و } \sin 60^\circ$$

ج