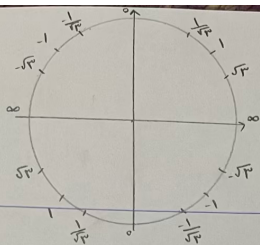
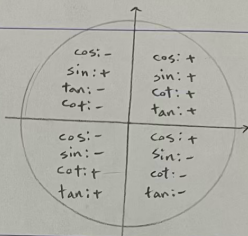


$$\tan = \frac{\sin}{\cos}$$



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



$$\sin 15^\circ = \frac{\sqrt{3}}{4}, \sin 75^\circ = \frac{\sqrt{3}}{4} \quad 4^\circ \text{ (الف)}$$

$$\cos 15^\circ = -\frac{\sqrt{3}}{4}, \cos 75^\circ = -\frac{\sqrt{3}}{4} \quad 21^\circ \text{ (ب)}$$

$$\tan 15^\circ = -\frac{1}{\sqrt{3}}, \tan 75^\circ = -\frac{1}{\sqrt{3}} \quad 15^\circ \text{ (ج)}$$

$$\cot 15^\circ = -1, \cot 75^\circ = -1 \quad 315^\circ \text{ (د)}$$

$$\cos \frac{2\pi}{3} = -\frac{1}{2} \rightarrow \sin \frac{2\pi}{3} = \frac{1}{2} \rightarrow \sin 120^\circ, 60^\circ = \frac{1}{2} \quad \frac{5\pi}{9} \text{ و } \frac{\pi}{9} \text{ (الف)}$$

$$\cos \frac{11\pi}{9} = -\frac{\sqrt{3}}{2} \rightarrow \sin \frac{11\pi}{9} = -\frac{\sqrt{3}}{2} \rightarrow \sin 240^\circ, 120^\circ = -\frac{\sqrt{3}}{2} \quad \frac{5\pi}{9} \text{ و } \frac{7\pi}{9} \text{ (ب)}$$

$$\cot \frac{2\pi}{3} = -1 \quad \cos 180^\circ = -1 \quad 180^\circ \text{ (الف)}$$

$$\cos 150^\circ = -\frac{\sqrt{3}}{2} \rightarrow \sin 150^\circ = \frac{1}{2} \rightarrow \sin 120^\circ, 60^\circ = \frac{1}{2} \quad 120^\circ \text{ و } 60^\circ \text{ (ب)}$$