

TRIGONOMETRIC EQUATIONS FORMULAE

General Cases:

$$\sin \theta = \pm x$$

$$\theta = \pm \sin^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\sin \theta = x$$

$$\theta = (-1)^k \sin^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\cos \theta = \pm x$$

$$\theta = \pm \cos^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\cos \theta = x$$

$$\theta = \pm \cos^{-1} x + 2\pi k, k \in \mathbb{Z}$$

$$\tan \theta = \pm x$$

$$\theta = \pm \tan^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\tan \theta = x$$

$$\theta = \tan^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\cot \theta = \pm x$$

$$\theta = \pm \cot^{-1} x + \pi k, k \in \mathbb{Z}$$

$$\cot \theta = x$$

$$\theta = \cot^{-1} x + \pi k, k \in \mathbb{Z}$$

Special Cases:

$$\sin \theta = \pm 1,$$

$$\theta = \frac{\pi}{2} + \pi k, k \in \mathbb{Z}$$

$$\sin \theta = 1$$

$$\theta = \frac{\pi}{2} + 2\pi k, k \in \mathbb{Z}$$

$$\sin \theta = -1$$

$$\theta = -\frac{\pi}{2} + 2\pi k, k \in \mathbb{Z}$$

$$\sin \theta = 0$$

$$\theta = \pi k, k \in \mathbb{Z}$$

$$\cos \theta = \pm 1$$

$$\theta = \pi k, k \in \mathbb{Z}$$

$$\cos \theta = 1$$

$$\theta = 2\pi k, k \in \mathbb{Z}$$

$$\cos \theta = -1$$

$$\theta = \pi + 2\pi k, k \in \mathbb{Z}$$

$$\cos \theta = 0$$

$$\theta = \frac{\pi}{2} + \pi k, k \in \mathbb{Z}$$