



Trigonometric Equations Ex 11.1 Q1(v)

We have,

$$\tan \theta = \frac{-1}{\sqrt{3}}$$

$$\Rightarrow \tan \theta = \tan \left(-\frac{\pi}{6} \right)$$

$$\Rightarrow \tan \theta = \tan \left(-\frac{\pi}{6} \right) \quad [\because \tan(-\theta) = -\tan \theta]$$

$$\Rightarrow \theta = n\pi + \left(-\frac{\pi}{6} \right), n \in \mathbb{Z}$$

$$\text{or } \theta = n\pi - \frac{\pi}{6}, n \in \mathbb{Z}$$

Trigonometric Equations Ex 11.1 Q1(vi)

We have,

$$\sqrt{3} \sec \theta = 2$$

$$\Rightarrow \frac{1}{\cos \theta} = \frac{2}{\sqrt{3}}$$

$$\Rightarrow \cos \theta = \frac{\sqrt{3}}{2}$$

$$\Rightarrow \cos \theta = \cos \left(\frac{\pi}{6} \right)$$

$$\Rightarrow \theta = 2n\pi \pm \frac{\pi}{6}, n \in \mathbb{Z}$$

Trigonometric Equations Ex 11.1 Q2(i)

We have,

$$\sin 2\theta = \frac{\sqrt{3}}{2}$$

$$\Rightarrow \sin 2\theta = \sin \left(\frac{\pi}{3} \right)$$

$$\Rightarrow 2\theta = n\pi + (-1)^n \frac{\pi}{3}, n \in \mathbb{Z}$$

$$\theta = \frac{n\pi}{2} + (-1)^n \frac{\pi}{6}, n \in \mathbb{Z}$$

Trigonometric Equations Ex 11.1 Q2(ii)

We have,

$$\cos 3\theta = \frac{1}{2}$$

$$\Rightarrow \cos 3\theta = \cos\left(\frac{\pi}{3}\right)$$

$$\Rightarrow 3\theta = 2n\pi \pm \frac{\pi}{3}, n \in \mathbb{Z}$$

$$\Rightarrow \theta = 2n\frac{\pi}{3} \pm \frac{\pi}{9}, n \in \mathbb{Z}$$

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