$$\sin\theta = \sin\alpha$$

$$\implies \theta = n\pi + (-1)^n\alpha,\ n \in \mathbb{Z} \tag{1}$$

$$\cos\theta = \cos\alpha$$

$$\implies \theta = 2n\pi \pm \alpha,\ n \in \mathbb{Z} \tag{2}$$

$$\tan\theta = \tan\alpha$$

$$\implies \theta = n\pi + \alpha,\ n \in \mathbb{Z} \tag{3}$$

$$\sin^2\theta = \sin^2\alpha$$

$$\implies \theta = n\pi \pm \alpha,\ n \in \mathbb{Z} \tag{4}$$

$$\tan^2\theta = \tan^2\alpha$$

$$\implies \theta = n\pi \pm \alpha,\ n \in \mathbb{Z} \tag{5}$$

$$a\cos\theta + b\sin\theta = c$$

$$\implies \theta = 2n\pi + \phi \pm \beta \tag{6}$$

$$\tan\phi = \frac{b}{a},\ \cos\beta = \frac{c}{\sqrt{a^2+b^2}}$$