

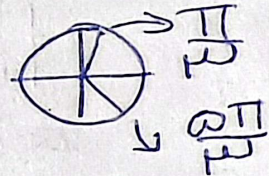
$\wedge \cos$

$$\wedge \cos n = 1 + \tan^2 n = \frac{1}{\cos^2 n}$$

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 $\Rightarrow \wedge \cos^2 n = 1 \Rightarrow \cos^2 n = \frac{1}{\wedge}$

$$\cos n = \frac{1}{\wedge}$$

$$\cos n = \cos \frac{\pi}{\wedge} \rightarrow$$



$$n = \mu k \pi \pm \frac{\pi}{\wedge}$$

$$0 \leq \sin^p(\alpha) \leq 1 \rightarrow 0 \leq \cos^p n \leq \omega$$

$$-1 \leq \cos(\pi n) \leq 1 \rightarrow -P \leq P \cos(\pi n) \leq P$$

$$-P \leq \omega \sin^p n + P \cos(\pi n) \leq P$$

$\downarrow$
 $\min$
 ω

$$\Rightarrow n = -\pi, \pi$$

$$\Rightarrow \sin^p(n) = 0 \rightarrow n = k\pi$$

$$\cos^p \pi n = -1 \rightarrow \pi n = Pk\pi + \pi$$

$$n = \frac{Pk\pi}{\omega} + \frac{\pi}{\omega}$$

$$P \sin n(1 - P \sin^2 n) + \sin n = 1 \Rightarrow P \sin n - P \sin^3 n + \sin n = 1$$

$$P \sin^2 n - P \sin n + 1 = 0 \Rightarrow \sin n = t \quad P t^2 - P t + 1 = 0 \Rightarrow t = -1$$

$$\frac{P t^2 - P t + 1}{P t^2 - P t + 1} \Big| \frac{t+1}{P t^2 - P t + 1}$$

$$(t+1)(P t - 1)^2$$

$$\frac{-P t^2 - P t + 1}{-P t^2 - P t}$$

$$t+1$$

$$\Rightarrow \frac{P\pi}{P} + \frac{\pi}{4} + \frac{\omega\pi}{4} = \left(\frac{\omega\pi}{P} \right)$$

$$\sin n = -1 \Rightarrow n = P k \pi - \frac{\pi}{P}$$

$$\sin n = \frac{1}{P} \Rightarrow n = P k \pi + \frac{\pi}{4}$$

$$n = P k \pi + \frac{\omega\pi}{4}$$

$$\frac{1}{\sin(\frac{\pi}{P} + P n)}$$

$$+ \frac{1}{\cos(\frac{\pi}{P} + P n)}$$

$$= \frac{1}{\cos P n} - \frac{1}{\sin P n} = 0$$

$$\frac{\sin P n - \cos P n}{\cos P n \sin P n} = 0$$

$$P \sin \rightarrow$$

$$\cos P n (P \sin P n - 1) = 0 \Rightarrow \cos P n = 0 \rightarrow \infty$$

$$\sin P n = \frac{1}{P} \Rightarrow P n = P k \pi + \frac{\pi}{4}$$

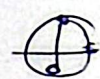
$$P n = P k \pi + \frac{\omega\pi}{4}$$

$$\rightarrow k \pi + \frac{\pi}{4} \quad n = k \pi + \frac{\omega\pi}{4P}$$

$$n = \frac{\pi}{4P} \Rightarrow \frac{\omega\pi}{4P} \rightarrow \frac{\omega\pi}{4P} - \frac{\pi}{4P} > \frac{\pi}{4P} \rightarrow \tanh \frac{P\pi}{4} > -\sqrt{P}$$

$$\cos(n - \frac{\pi}{p}) = \cos(n + \frac{\pi}{q} - \frac{\pi}{p}) = \cos(\frac{\pi}{p} - (n + \frac{\pi}{q})) = \sin(n + \frac{\pi}{q})$$

$$\rightarrow \sin^2(n + \frac{\pi}{q}) = 1 \rightarrow \sin(n + \frac{\pi}{q}) = \pm 1$$



$$n + \frac{\pi}{q} = k\pi + \frac{\pi}{p}$$

$$n = \frac{\pi}{p} \text{ and } \frac{15\pi}{p}$$

$$n = k\pi + \frac{\pi}{p} \rightarrow$$

$$p \sin(n + \alpha) \rightarrow p \sin(n + \frac{\pi}{p}) = \sqrt{p} \Rightarrow \sin(n + \frac{\pi}{p}) = \frac{\sqrt{p}}{p}$$

$$\tan \alpha = \sqrt{p}$$

$$n + \frac{\pi}{p} = p k \pi + \frac{\pi}{p} \rightarrow n = p k \pi + (-\frac{\pi}{p})$$

$$n + \frac{\pi}{p} = p k \pi + \frac{11\pi}{p}$$

$$n = -\frac{\pi}{p}, \frac{11\pi}{p}, \frac{19\pi}{p}$$

$$p \sin n (-\cos m) = 1 \rightarrow -p \sin m = 1 \rightarrow \sin m = -\frac{1}{p} = \sin(-\frac{\pi}{q})$$

$$m = p k \pi - \frac{\pi}{q} \rightarrow m = k\pi - \frac{\pi}{1p}$$

$$m = p k \pi + \frac{11\pi}{q} \rightarrow m = k\pi + \frac{11\pi}{1p}$$

$$m = \frac{11\pi}{p}, \frac{19\pi}{p}, \frac{27\pi}{p}, \frac{35\pi}{p}$$

$$\cos m - \sin m = \frac{\sqrt{p}}{p}$$

$$= \frac{\sqrt{q}}{p} \rightarrow$$

$$\frac{\sqrt{q}}{p} m - \sqrt{q} \sin m = \sqrt{q} \rightarrow \sin m = -\frac{p}{q} m$$

$$-\frac{p}{q} m = \frac{1}{p} \rightarrow m = -\frac{p}{q}$$

$$s. (\cos m - \sin m) = \frac{p}{p} \rightarrow \sin m = \frac{p}{p} \rightarrow \sin m = 1$$

$$\tan \alpha = \cot(\psi_h) \Rightarrow \tan \alpha = \tan\left(\frac{\pi}{2} - \psi_h\right)$$

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$$\Rightarrow m = k\pi + \frac{\pi}{2} - \psi_h \Rightarrow m = \frac{k\pi}{\kappa} + \frac{\pi}{\lambda} \Rightarrow m = \frac{9\pi}{\lambda}, \frac{11\pi}{\lambda}, \frac{13\pi}{\lambda}, \frac{15\pi}{\lambda}$$