

الف 1 - P sin² α = P sin α - 1

P sin² α + P sin α - P = 0

sin² α + P sin α - P = 0 (sin α - 1)(sin α + P)

sin α = 1/P

α = PKM + π/P

α = PKM + π/P

-P/P = -P cos α

1/P ✓

ب) P cos² α - 1 + cos α - P = 0

P cos² α + cos α - P = 0

-P/P = -P cos α

cos α = 1

α = PKM

الف (sin² α - cos² α)(sin² α + cos² α) = sin² α - cos² α = sin² α

sin(π/P + Pα) = sin² α

Pα = PKM + π/P + Pα → α = KM + π/P

Pα = PKM + π - π/P - Pα → α = KM - π/P

ب) cos² α + P sin cos - 1 = 0 cos² α + sin cos = 0 sin² α = -cos² α

sin² α = sin(π/P + Pα)

Pα = PKM + π/P + Pα X

Pα = PKM + π - π/P - Pα → α = KM - π/P

الف) cos α (P cos α + 1) = 1/P cos α (P cos α + 1) = 1/P cos α + cos α = 1/P sin α

sin α ≠ 0

P cos² α + cos α = 1 P cos² α + cos α - 1 = 0

a + c = b

cos α = 1/P α = PKM + π/P

-1 cos α = -1 α = PKM + π → 00E → 00E sin ≠ 0

ب) P sin² α - sin cos + cos² α = P P(1 - cos² α) - sin cos + cos² α = P

P - P cos² α - sin cos + cos² α = P - cos² α - sin cos α = 0 cos α (-cos - sin) = 0

cos α = 0 α = KM + π/P

-cos α - sin α = 0 -cos α = sin α α = KM - π/P

$$\text{الف) } \cos\left(\alpha - \frac{\pi}{p} + \frac{\pi}{p}\right) \cos\left(\alpha - \frac{\pi}{p}\right) = \frac{1}{p}$$

$$-\sin\left(\alpha - \frac{\pi}{p}\right) \cos\left(\alpha - \frac{\pi}{p}\right) = \frac{1}{p} \quad -\sin\left(p\alpha - \frac{\pi}{p}\right) = \frac{1}{p}$$

$$\cos p\alpha = \frac{1}{p} \quad p\alpha = pK\pi + \frac{\pi}{p} \quad \alpha = K\pi + \frac{\pi}{p}$$

$$\text{ب) } \cos\left(p\alpha - \frac{\pi}{p}\right) = \cos\left(\frac{\pi}{p} + p\alpha\right) \quad p\alpha - \frac{\pi}{p} = pK\pi + \frac{\pi}{p} + p\alpha$$

$$p\alpha - \frac{\pi}{p} = pK\pi + \frac{\pi}{p} + p\alpha \rightarrow \alpha = \frac{K\pi}{p} - \frac{\pi}{p}$$

$$\frac{\sin p\alpha + \sin p\alpha}{\sin p\alpha} - \sin p\alpha = \cos p\alpha$$

$$\sin p\alpha + \sin p\alpha = 1$$

$$\frac{\sin p\alpha}{\sin p\alpha \neq 0} \neq \frac{1}{\sin p\alpha} \quad \frac{K\pi}{p}$$

$$\sin p\alpha = \sin p\alpha + \sin p\alpha \quad \sin p\alpha \neq 0 \quad p\alpha = pK\pi \quad \alpha = \frac{K\pi}{p}$$

$$\alpha = K\pi \pm \frac{\pi}{p}$$

$$\frac{\sin \frac{\alpha}{p}}{1 + \cos \frac{\alpha}{p}} = \frac{1 + \cos \frac{\alpha}{p}}{\sin \frac{\alpha}{p}}$$

$$\tan \frac{\alpha}{p} = \cot \frac{\alpha}{p} \quad \tan \frac{\alpha}{p} = \tan\left(\frac{\pi}{p} - \frac{\alpha}{p}\right) \quad \frac{\alpha}{p} = K\pi + \frac{\pi}{p} - \frac{\alpha}{p}$$

$$\alpha = pK\pi + \pi \quad \text{I) } \cos \frac{\alpha}{p} \neq 1 \quad \frac{\alpha}{p} \neq pK\pi + \pi \quad \alpha \neq pK\pi + \pi \quad \text{II) } \sin \frac{\alpha}{p} \neq 0$$

$$\frac{\alpha}{p} \neq K\pi \quad \alpha \neq pK\pi \quad \text{III) } \alpha = pK\pi + \pi$$

$$\cos p\alpha - \sin p\alpha \cos p\alpha = \cos p\alpha + \sin p\alpha$$

-V

$$\cos p\alpha - \sin p\alpha \cos p\alpha - \cos p\alpha - \sin p\alpha = -\sin p\alpha \cos p\alpha - \sin p\alpha = 0$$

$$\therefore \sin p\alpha (\cos p\alpha + 1) = 0 \quad -\sin p\alpha = 0 \quad \sin p\alpha = 0 \quad \alpha = K\pi$$

$$\cos p\alpha = -1 \quad p\alpha = pK\pi + \pi \quad \alpha = \frac{pK\pi}{p} + \frac{\pi}{p}$$

$$\alpha = 0 \quad \pi \quad p\pi \quad \frac{\pi}{p} \quad \frac{2\pi}{p}$$

جواب د

$$\tan\left(\frac{\pi}{p} - x\right) = \tan px$$

$$px = k\pi + \frac{\pi}{p} - x$$

$$x = \frac{k\pi}{p} + \frac{\pi}{1+p} \quad \tan x \neq -1 \quad x \neq k\pi + \frac{\pi}{p} + \frac{\pi}{p}$$

$$\Rightarrow x = \frac{k\pi}{p} + \frac{\pi}{1+p}$$

$$\sqrt{p} \cos px \geq 0 \quad \cos px \geq 0 \quad x \in [0, \pi] \quad px \in [0, p\pi]$$

$$px \in \left[0, \frac{\pi}{p}\right) \cup \left[\frac{p\pi}{p}, p\pi\right] \quad x = \left[0, \frac{\pi}{p}\right) \cup \left[\frac{p\pi}{p}, \pi\right]$$

$$1 + \sin px = p \cos px \quad 1 + \sin px = 1 + \cos px$$

$$\sin px = \cos px \quad \sin px = \sin\left(\frac{\pi}{p} - px\right)$$

$$px = \frac{\pi}{p} - k\pi + p k \pi \quad px = \frac{\pi}{p} + p k \pi \quad x = \frac{\pi}{p} + k\pi \rightarrow \frac{\pi}{p} + \frac{p\pi}{p} + \frac{p\pi}{p}$$

$$x = -\frac{\pi}{p} - k\pi$$

در بازه ابتدای سوال نیست + دو جواب

$$(1) (\sin x - \cos x) (\sin x + \cos x + \sin x \cos x) = -1$$

$$(\sin x - \cos x) \left(1 + \frac{1 - t^2}{p}\right) = -1 \quad t^3 - pt - p = 0$$

$$\sin x - \cos x = t \quad (\sin x - \cos x)^p = t^p = \frac{1 - t^2}{p} \sin x \cos x$$

$$\sin x \cos x = \frac{1 - t^2}{p}$$

$$t = -1 \quad \sin x - \cos x = -1$$

$$0 - \cos x = -1 \quad \cos x = 1 \quad x = p k \pi \quad \leftarrow \sin x = 0$$

$$\sin x = -1 \quad \sin x = -1 \quad x = \frac{p\pi}{p} + p k \pi \quad \leftarrow \cos x = 0$$

$$\text{جواب ها} \quad 0, p\pi, \frac{p\pi}{p}$$

$$(1) (\sin^p x - \cos^p x) (\sin^p x + \cos^p x) \quad \sin^p x - \cos^p x = 1 \quad -\cos^p x = 1$$

$$\cos^p x = -1 \quad px = p k \pi + \pi \quad x = k\pi + \frac{\pi}{p}$$