

1) الف] $1 - 2\sin^2 n = 2\sin n - 1 \Rightarrow 2\sin^2 n + 2\sin n - 2 = 0 \Rightarrow \sin^2 n + \sin n - 1 = 0$ $\sin n = 1$
 $(\sin n + 1)(\sin n - 1) = 0$

$n = 2k\pi + \frac{\pi}{2}, n = 2k\pi + \frac{3\pi}{2}$

ب] $2\cos^2 n - 1 + (\sin n - 2) = 2\cos^2 n + \sin n - 1 = 0$ $\sin n = 1 \Rightarrow n = 2k\pi$

2) الف] $\cos 2n = \sin 2n \Rightarrow \sin(-2n) = \sin(\frac{\pi}{4} - 2n) \Rightarrow \frac{\pi}{4} - 2n = 2k\pi + (-2n)$

$\Rightarrow n = k\pi + \frac{\pi}{8}$

$\Rightarrow \frac{\pi}{4} - 2n = \frac{\pi}{4} - 2n = 2k\pi + \pi + 2n \Rightarrow -4n = 2k\pi + \frac{\pi}{2} \Rightarrow n = \frac{k\pi}{2} - \frac{\pi}{8} \Rightarrow \frac{k\pi}{2} - \frac{\pi}{8}$

ب] $2\cos^2 n + 2\sin(-2n) = \sin^2 n + \cos^2 n \Rightarrow \sin^2 n - \cos^2 n = 2\sin n \cos n \Rightarrow -(\cos 2n = \sin 2n) \Rightarrow \cos 2n = \sin(-2n)$

$\cos(\frac{\pi}{4} - 2n) = \sin(-2n) \Rightarrow -2n = 2k\pi + \frac{\pi}{4} - 2n \Rightarrow -2n = 2k\pi + \frac{\pi}{4} + 2n \Rightarrow \frac{k\pi}{2} - \frac{\pi}{8} = \frac{k\pi}{2} - \frac{\pi}{8}$

3) الف] $\frac{\cos n}{\sin n} (2\cos n + 1) = \frac{1}{\sin n} \Rightarrow \sin n \neq 0 \Rightarrow 2\cos^2 n + \cos n - 1 = 0 \Rightarrow 1 - \frac{1}{2} \Rightarrow \cos n = -\frac{1}{2} \Rightarrow 2k\pi + \frac{2\pi}{3} \times \sin n = 0 \times$

$\cos n = \frac{1}{2} \Rightarrow n = 2k\pi + \frac{\pi}{3} / n = 2k\pi - \frac{\pi}{3}$

ب] $1 + \sin^2 n - \sin n \cos n = 2 \Rightarrow -\sin n \cos n = \cos^2 n \Rightarrow \cos 2n = 0 \Rightarrow \sin n = -\cos n$

$\Rightarrow \cos n = 0 \Rightarrow n = k\pi + \frac{\pi}{2} / \sin n = -\cos n \Rightarrow n = k\pi + \frac{\pi}{2}$

4) الف] $(\cos t)(\sin(t - \frac{\pi}{4})) = \cos t + \sin t = \frac{1}{2} \sin(t + \frac{\pi}{4}) = \frac{1}{2} \cos 2n = \frac{1}{2} \Rightarrow \cos 2n = \frac{1}{2}$

$2n = 2k\pi \pm \frac{\pi}{3} \Rightarrow n = k\pi \pm \frac{\pi}{6}$

$$\rightarrow C \cdot \sin(rn - \frac{\pi}{9}) = C \cdot \sin(rn + \frac{\pi}{9}) = rn - \frac{\pi}{9} = rk\pi + \frac{\pi}{9} + rn \times$$

$$rn - \frac{\pi}{9} = rk\pi - rn - \frac{\pi}{9} \Rightarrow rn = rk\pi - \frac{\pi}{9} \Rightarrow n = \frac{rk\pi - \frac{\pi}{9}}{2}$$

$$c) \frac{r \sin(rn) \cdot (1 + \sin(rn))}{\sin(rn)} \cdot \sin(rn) = (1 + \sin(rn)) \Rightarrow r(rn + 1 - \sin(rn)) = C \cdot \sin(rn) \Rightarrow$$

$$r(rn + 1) = 1 \Rightarrow C \cdot \sin(rn) = 0 \Rightarrow rn = rk\pi + \frac{\pi}{2} \Rightarrow n = \frac{rk\pi + \frac{\pi}{2}}{r} \Rightarrow \sin(rn) \neq 0$$

$$4) \tan \frac{\pi}{3} = \frac{1}{\tan \frac{\pi}{3}} \Rightarrow \tan \frac{\pi}{3} = 1 / \tan \frac{\pi}{3} = 1 \Rightarrow \frac{\pi}{3} = \frac{\pi}{3} \Rightarrow n = \frac{rk\pi + \frac{\pi}{3}}{r} \Rightarrow \sin(rn) \neq 0$$

v)

$$1 - \sin(rn) - \sin(rn) \cdot (1 + \sin(rn)) = 0 \Rightarrow \sin(rn) = 0 \Rightarrow rn = rk\pi \Rightarrow n = \frac{rk\pi}{r}$$

$$C \cdot \sin(rn) = 1 \Rightarrow rn = rk\pi + \frac{\pi}{2} \Rightarrow n = \frac{rk\pi + \frac{\pi}{2}}{r} \Rightarrow \sin(rn) \neq 0$$

$$1) \tan \frac{\pi}{4} = 1 \Rightarrow \tan(\frac{\pi}{4} + n) = \tan \frac{\pi}{4} \Rightarrow rn = rk\pi + \frac{\pi}{4} \Rightarrow n = \frac{rk\pi + \frac{\pi}{4}}{r}$$

$$\sqrt{(\sin(rn) + \cos(rn))^2} = |\sin(rn) + \cos(rn)| = \sqrt{2} \sin(rn + \frac{\pi}{4}) = \sqrt{2} \sin(rn)$$

$$\sin(rn + \frac{\pi}{4}) = \sin(\frac{\pi}{4} - rn) \Rightarrow rn + \frac{\pi}{4} = rk\pi + \frac{\pi}{4} - rn \Rightarrow rn = rk\pi + \frac{\pi}{4} \Rightarrow n = \frac{rk\pi + \frac{\pi}{4}}{r}$$

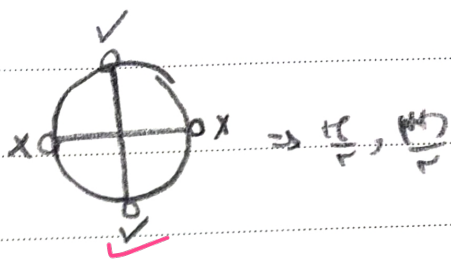
$$\Rightarrow \frac{\pi}{4} / \frac{\omega \pi}{1r} \Rightarrow \sin(rn) + \cos(rn) = \sqrt{2} \sin(rn)$$

$$\sin(rn + \frac{\pi}{4}) = \sin(rn) \Rightarrow rn + \frac{\pi}{4} = rk\pi \Rightarrow n = \frac{rk\pi - \frac{\pi}{4}}{r}$$

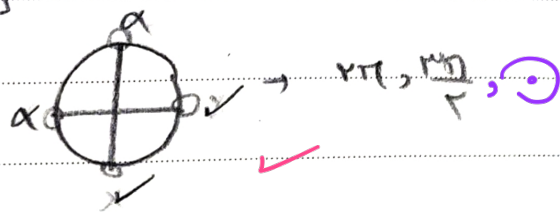
$$\frac{rk\pi}{r} + rn = rk\pi + \frac{\pi}{4} + n = rk\pi - \frac{\omega \pi}{r} \Rightarrow n = \frac{rk\pi - \frac{\omega \pi}{r}}{r}$$

$$\frac{\omega \pi}{r} + rn = rk\pi + \frac{\pi}{4} - n - \frac{\pi}{4} + n = rk\pi - \frac{\omega \pi}{r} \Rightarrow n = \frac{rk\pi - \frac{\omega \pi}{r}}{r}$$

الف ۱.۱



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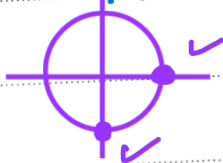
سوال ۱۰

در معادلات به فرم $\pm \sin^n x \pm \cos^n x$ برابر 1 یا -1 فقط نامی است نقاط اصغر!

$$\sin^n x - \cos^n x = 1$$

$$x = 2\pi \frac{1}{0}$$

$$x = \frac{\pi}{2}$$

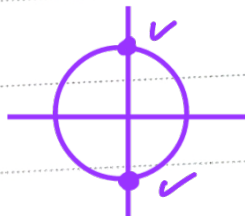


جواب چیک کن!

$$\sin^4 x - \cos^2 x = 1$$

$$x = \frac{\pi}{2}$$

$$x = \frac{3\pi}{2}$$



الف