۸/۲۶ ۱۴ آذر — تکلیف ۱۵ — نرگل قمری

۱- $S=\frac{\text{قاعده} \times \text{ارتفاع}}{2}$ ، قاعده $= T=\frac{\pi}{|-2|}=\frac{\pi}{2}$ (معادل tan است)

ارتفاع: $x=0 \to \tan\left(-2(0)+\frac{\pi}{4}\right)=+1$

$\to S=\frac{1\times\pi}{4}=\frac{\pi}{4}$ — ۱٫۷۵

$2x-\frac{\pi}{4}=\pm\frac{\pi}{2}$ $\to x=-\frac{\pi}{8}$ ، $x=\frac{3\pi}{8}$ $\to \frac{3\pi}{8}-\left(-\frac{\pi}{8}\right)=\frac{\pi}{2}$

۲- $x=\frac{2}{3} \to \frac{4}{9}-\frac{2}{3}\sin\alpha-\frac{1}{4}(1-\sin^2\alpha)=0$

$=\frac{1}{4}\sin^2\alpha-\frac{2}{3}\sin\alpha+\frac{7}{36}=0 \to \begin{cases}\sin\alpha=\frac{7}{3} \ \times \\ \sin\alpha=\frac{1}{3} \ \checkmark\end{cases}$ — ۲

$\Rightarrow \sin^2\alpha+\cos^2\alpha=1 \to \cos^2\alpha=\frac{8}{9} \to 1+\tan^2\alpha=\frac{1}{\cos^2\alpha}=\frac{9}{8}$

۳- $\log(\sin\alpha)-\log(-\cos\alpha)=\log\frac{\sin\alpha}{-\cos\alpha}=\log(-\tan\alpha)=\log 3$ — ۱٫۲۵

$\Rightarrow \tan\alpha=-3 \Rightarrow (\sin\alpha-\cos\alpha)^2=1-2\sin\alpha\cos\alpha$

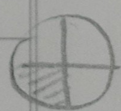
$=1-2\left(\frac{1}{\tan\alpha+\cot\alpha}\right)=1-2\left(\frac{1}{-3-\frac{1}{3}}\right)=1+\frac{3}{5}=\frac{8}{5}$

$\Rightarrow \sin-\cos=\pm\sqrt{\frac{8}{5}} \xrightarrow{\text{ربع ۲}} +\sqrt{\frac{8}{5}}$

۴- $\sin^4\theta+1-\sin^2\theta=\frac{4}{5} \Rightarrow \sin^4\theta-\sin^2\theta=-\frac{1}{5}$ — ۲

$\cos^4\theta+\sin^2\theta=(1-\sin^2\theta)^2+\sin^2\theta=\underbrace{\sin^4\theta-\sin^2\theta}_{-\frac{1}{5}}+1=\frac{4}{5}$

۵- $\frac{\sin x(3+\cos x)}{2(1-\cos^2 x)}=\frac{3+\cos x}{2\sin x}<0 \Rightarrow \sin x<0$ (همواره +) — ۲



$\frac{\sin^2 x}{\cos x}-\frac{1}{\cos x}>0 \to \frac{-\cos^2 x}{\cos x}>0 \Rightarrow \cos x<0$

ربع ۳

$\frac{\sin}{\cos} = \frac{}{-r}$

$r\cos x + r^{\circ}\sin x = 0 \longrightarrow r\cos x = -r^{\circ}\sin x$ — ۲-۴

$\xrightarrow{\sin x \cos x} \tan x = -\frac{r}{r^{\circ}}$, $\cot x = -\frac{r^{\circ}}{r} \longrightarrow \tan x + \cot x = -\frac{1r^{\circ}}{4}$ ✓

$\sin\omega_{\cdot} + 1 = (\sin 1\omega_{\cdot} + \cos r\omega_{\cdot})^{r} \longrightarrow \sqrt{\sin\omega_{\cdot} + 1} = \sin r\omega_{\cdot} + \cos r\omega_{\cdot}$ ۲-۷

$\sin 1_{\cdot}^{\circ} + \sin\omega_{\cdot}^{\circ} = r\sin 1r_{\cdot}^{\circ}\cos r_{\cdot}^{\circ} = \cos r_{\cdot}^{\circ} \Rightarrow A = \frac{\sin r\omega_{\cdot} + \cos r\omega_{\cdot}}{\cos r_{\cdot}^{\circ}} = \frac{\sqrt{r}\sin(r\omega_{\cdot} + 4\omega_{\cdot})}{\cos r_{\cdot}^{\circ}}$

$\frac{\sqrt{r}\sin v_{\cdot}^{\circ}}{\sin v_{\cdot}^{\circ}} = \sqrt{r}^{\frac{1}{r}}$ ✓

$\sin 1_{\cdot}^{\circ} \times (\cos 1_{\cdot}^{\circ})(\cos r_{\cdot}^{\circ})(\cos f_{\cdot}^{\circ}) = \frac{\sin \Lambda_{\cdot}^{\circ}}{\sin 1_{\cdot}^{\circ} \times \Lambda} = \frac{\cos 1_{\cdot}^{\circ}}{\sin 1_{\cdot}^{\circ} \times \Lambda}$ — ۸

$\sin 1_{\cdot}^{\circ} \times r \times r \times r$

$= \cot 1_{\cdot}^{\circ} \times \frac{1}{\Lambda}$ ✓ ۲

— ۹

$\sqrt{1_{\cdot}}\sin(\alpha + x) = r \longrightarrow \sin(\alpha + x) = \frac{\sqrt{1_{\cdot}}}{\omega}$

$\cos(\alpha + x) = \sqrt{1 - \sin^{r}(\alpha + x)} = \frac{\sqrt{1\omega}}{\omega}$

$\cos(\alpha + x) = \cos\alpha\cos x - \sin\alpha\sin x \Rightarrow \frac{\sqrt{1\omega}}{\omega} = \frac{1}{\sqrt{1_{\cdot}}}(\cos\alpha - r^{\circ}\sin\alpha)$

$\longrightarrow \begin{cases} \cos\alpha - r^{\circ}\sin\alpha = \sqrt{4} \\ \sin\alpha + r^{\circ}\cos\alpha = r \end{cases} \Rightarrow \begin{matrix} \sin\alpha = \frac{r - r^{\circ}\sqrt{4}}{1_{\cdot}} \\ \cos\alpha = \frac{\sqrt{4} + 4}{1_{\cdot}} \end{matrix}$ ۲

$\omega\cos r\alpha = \omega(r\cos^{r}\alpha - 1) \longrightarrow \cos r\alpha = \frac{-f + 4\sqrt{4}}{\omega}$

$1r\cos\alpha = \frac{4\sqrt{4} + r^{\circ}4}{\omega}$

$\omega\cos r\alpha + 1r\cos\alpha = \frac{-r^{\circ}4 - 4\sqrt{4}}{\omega} + \frac{-f + 4\sqrt{4}}{\omega} = \frac{-r_{\cdot}}{\omega} = -\Lambda$ ✓

SCbd

$\hat{A} + \gamma\gamma + \hat{C} = 1\Lambda\cdot \Rightarrow \hat{C} = 1\cdot\Lambda - A$ ـ 1.

$\gamma \sin\gamma\gamma \times (\sin 1\cdot\Lambda - A) = 1 + \cos A$, $\sin 1\cdot\Lambda = \sin\gamma\gamma$
$\cos 1\cdot\Lambda = -\cos\gamma\gamma$

$\Rightarrow \gamma \sin(\gamma\gamma) \times (\sin\gamma\gamma \cos A + \sin A \cos\gamma\gamma) = 1 + \cos A$

$\Rightarrow \gamma \sin^{\gamma}\gamma\gamma \cos A + \gamma \sin\gamma\gamma \cos\gamma\gamma \sin A = 4 \cos A$

$(\gamma \sin^{\gamma}\gamma\gamma - 1)(\cos A + \gamma \sin\gamma\gamma \cos\gamma\gamma \sin A = 1$

$-\cos 1\xi\xi \times \cos A + \sin 1\xi\xi \times \sin A = 1 = \cos(A - 1\xi\xi)$

$\Rightarrow \cos(A - 1\xi\xi) = 1 \longrightarrow A - 1\xi\xi = \gamma K\pi \Rightarrow A = \gamma^{\circ}4$

$\oplus \gamma K\pi$

۳

دامنه $\rightarrow \begin{cases} \log(\sin\alpha) \longrightarrow \sin\alpha > 0 \\ \log(-\cos\alpha) \rightarrow -\cos\alpha > 0 \rightarrow \cos\alpha < 0 \end{cases}$ نتیجه دوم

$$\log\left(\frac{\sin\alpha}{-\cos\alpha}\right) = \log 3 \rightarrow -\tan\alpha < 3 \rightarrow \tan\alpha > -3$$

$$\sin\alpha = \frac{3}{\sqrt{10}}\ ,\ \cos\alpha = \frac{-1}{\sqrt{10}} \rightarrow \sin\alpha - \cos\alpha = \frac{3}{\sqrt{10}} - \left(-\frac{1}{\sqrt{10}}\right) = \frac{4}{\sqrt{10}}$$