

$$y = \tan(-2x + \frac{\pi}{4}) \quad B|y^0 \rightarrow \tan(\frac{\pi}{4}) = 1 \rightarrow y = 1$$

$$T = \frac{\pi}{1-\pi} = \frac{\pi}{\pi} \Rightarrow AC = \frac{\pi}{\pi} \Rightarrow S = \frac{\frac{\pi}{\pi} \times 1}{\pi} = \frac{\pi}{\pi}$$

(۲) ✓

$$x^2 - (\sin \alpha)x - \frac{1}{\epsilon} \cos^2 \alpha = 0 \xrightarrow{\cos^2 \alpha = (1 - \sin^2 \alpha)} x^2 - (\sin \alpha)x - \frac{1}{\epsilon} (1 - \sin^2 \alpha) = 0$$

$$x = \frac{\pi}{\mu} \Rightarrow \frac{\epsilon}{a} - \frac{\pi}{\mu} \sin \alpha - \frac{1}{\epsilon} + \frac{1}{\epsilon} \sin^2 \alpha = 0 \Rightarrow \frac{1}{\epsilon} \sin^2 \alpha - \frac{\pi}{\mu} \sin \alpha + \frac{\pi^2}{\mu^2} = 0$$

$$\times \mu^2 \rightarrow \mu^2 \sin^2 \alpha - \pi \epsilon \sin \alpha + \pi^2 = 0 \Rightarrow \sin^2 \alpha - \pi \epsilon \sin \alpha + \pi^2 = 0 \Rightarrow \begin{cases} \sin \alpha = \frac{\pi}{\mu} \\ \sin \alpha = \frac{1}{\mu} \end{cases}$$

$$\Rightarrow \cos \alpha = \frac{\sqrt{1-\pi^2}}{\mu} \quad 1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \xrightarrow{\cos \alpha = \frac{\sqrt{1-\pi^2}}{\mu}} \frac{1}{\frac{1-\pi^2}{\mu^2}} = \frac{1}{1-\pi^2} = \frac{\mu^2}{1-\pi^2}$$

$$\mu y (\sin \alpha) - \mu y (-\cos \alpha) = \mu y^3 \Rightarrow \mu y \frac{\sin \alpha}{-\cos \alpha} = \mu y^3 \quad (1)$$

$$\Rightarrow \frac{\sin \alpha}{-\cos \alpha} = y^2 \Rightarrow \sin \alpha = -y^2 \cos \alpha \Rightarrow \sin \alpha - \cos \alpha = -y^2 \cos \alpha$$

$$= -y^2 \cos \alpha - \cos \alpha = -\epsilon \cos \alpha$$

$$\sin \alpha - \cos \alpha = -\frac{\epsilon}{\mu^2}$$

$$\sin^2 \theta = x, \cos^2 \theta = y \Rightarrow x + y = 1$$

$$x^2 + y = \frac{\epsilon}{a} \quad y^2 + x = (1-x)^2 + x = 1 - 2x + x^2 + x = 1 - x + x^2$$

$$= x^2 + y = \frac{\epsilon}{a} \Rightarrow \cos^2 \theta + \sin^2 \theta = \frac{\epsilon}{a} \quad (2) \checkmark$$

$$\sin x, \tan x > \frac{1}{\cos x} \rightarrow \frac{\sin^2 x}{\cos x} > \frac{1}{\cos x} \xrightarrow{\sin^2 x \leq 1} \Rightarrow \cos x < 0$$

$$\Rightarrow \cos^2 x \leq 1 \Rightarrow 1 - \cos^2 x \geq 0$$

$$\sin x (1 + \cos x) < 0 \xrightarrow{1 + \cos x > 0} \Rightarrow \sin x < 0 \rightarrow (1) \cap (2) \rightarrow \text{result}$$

$$\frac{\sin x (1 + \cos x)}{1 - \cos^2 x} < 0 \Rightarrow \sin x < 0 \rightarrow (1) \cap (2) \rightarrow \text{result}$$

$$\frac{P}{\sin \alpha} + \frac{W}{\cos \alpha} = 0 \Rightarrow \frac{P \cos \alpha + W \sin \alpha}{\sin \alpha \cdot \cos \alpha} = 0 \Rightarrow P \cos \alpha = -W \sin \alpha$$

$$\Rightarrow \frac{\sin \alpha}{\cos \alpha} = \frac{-P}{W} = -\tan \alpha \Rightarrow \cot \alpha = \frac{-W}{P}$$

$$\Rightarrow \tan \alpha + \cot \alpha = \frac{-P}{W} - \frac{W}{P} = \frac{-P^2 - W^2}{PW} = \frac{-1}{\frac{PW}{P^2 + W^2}}$$

$$\sqrt{1 + \sin \alpha_0} = \sqrt{1 + \cos \epsilon_0} = \sqrt{P \cos^2 \epsilon_0} = \sqrt{P} \cos \epsilon_0$$

$$\sin \alpha_0 + \sin 1_0 \xrightarrow[\text{sin, cos}]{\text{دوب}} P \sin \left(\frac{\alpha_0 + 1_0}{2} \right) \cdot \cos \left(\frac{\alpha_0 - 1_0}{2} \right)$$

$$= P \sin(\pi/2) \cdot \cos \epsilon_0 \Rightarrow \frac{\sqrt{1 + \sin \alpha_0}}{\sin \alpha_0 + \sin 1_0} = \frac{\sqrt{P} \cos \epsilon_0}{P \sin(\pi/2) \cos \epsilon_0}$$

$$= \sqrt{P}$$

$$(1 - P \sin^2 \alpha) = \cos 1_0 / P \cos^2 1_0 - 1 = \cos \epsilon_0$$

$$\frac{1 - \tan^2 \epsilon_0}{1 + \tan^2 \epsilon_0} = \cos \epsilon_0$$

$$\begin{aligned} \cos \epsilon_0 &= \cos 1_0 \times \cos \epsilon_0 \times \cos \epsilon_0 \xrightarrow{\times \sin 1_0} = \frac{1}{P} \sin^2 \epsilon_0 \cos \epsilon_0 \times \cos \epsilon_0 \\ &= \frac{\frac{1}{P} \times \sin^2 \epsilon_0 \times \cos \epsilon_0}{\sin 1_0} = \frac{1}{P} \frac{\sin^2 \epsilon_0}{\sin 1_0} = \frac{1}{P} \times \frac{\cos 1_0}{\sin 1_0} = \frac{1}{P} \cot 1_0 \end{aligned}$$

$$\sin \alpha + P \cos \alpha = P \Rightarrow \sin \alpha = P - P \cos \alpha \xrightarrow{\sin^2 \alpha + \cos^2 \alpha = 1}$$

$$(P - P \cos \alpha)^2 + \cos^2 \alpha = 1 \Rightarrow 1 - 2P \cos \alpha + P^2 \cos^2 \alpha + \cos^2 \alpha = 1$$

$$2P \cos^2 \alpha - 2P \cos \alpha \xrightarrow{\cos^2 \alpha = P \cos^2 \alpha - 1} 2(P \cos^2 \alpha - 1) - 2P \cos \alpha$$

$$= 1 - 2P \cos^2 \alpha - 2P \cos \alpha = 1 - 2P \cos^2 \alpha - 2P \cos \alpha - 1 = -2P \cos \alpha$$

$$A + B + C = 180^\circ$$

$$\xrightarrow{\text{قوسین جمع}} \sin B \cdot \sin C = (\cos(B - C) + \cos A) = \frac{1 + \cos A}{P}$$

$$\cos(B - C) + \cos A = 1 + \cos A \Rightarrow \cos(B - C) = 1$$

$$\Rightarrow B - C = 0 \Rightarrow B = C = 45^\circ \Rightarrow A = 180^\circ - 180^\circ = 0^\circ$$