

آنر سیاقا

$$\sin \pi = 0$$

$$\sin \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -\frac{\sqrt{2}}{2}$$

الف ①

$$\tan \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -1$$

$$\cos \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -\frac{\sqrt{2}}{2}$$

$$-\frac{\sqrt{2}}{2}$$

در کمال

$$(-1) + \left(-\frac{\sqrt{2}}{2} \cdot -\frac{\sqrt{2}}{2} \right) = -1 + \frac{1}{2} = -\frac{1}{2}$$

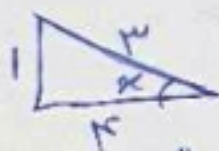
$$\tan \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -\frac{1}{\sqrt{2}}$$

$$\sin \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -\frac{\sqrt{2}}{2}$$

$$\cos \left(\frac{\pi}{2} + \frac{\pi}{2} \right) = -\frac{1}{2}$$

$$\left(-\frac{1}{\sqrt{2}} \cdot -\frac{\sqrt{2}}{2} \right) + \left(-\frac{1}{2} \right) = \frac{1}{2} - \frac{1}{2} = 0$$

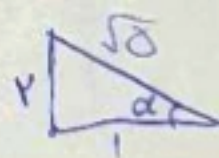
$$\cot t = \frac{\text{مقابل}}{\text{جانب مجاور}} = \frac{\pi}{T}$$



$$\sqrt{\pi^2 + 1} = \sqrt{9} = 3$$

$$\frac{\pi \cos x - \sin x}{\cos x + \sin x} = \frac{\pi \left(\frac{\pi}{3} \right) - \frac{1}{3}}{\frac{\pi}{3} + \frac{1}{3}} = \frac{\frac{11}{3}}{\frac{\pi+1}{3}} = \frac{11}{\pi+1}$$

$$\frac{\sin \alpha}{\cos \alpha} = \frac{\pi \cos \alpha}{\cos \alpha} \Rightarrow \tan \alpha = \pi$$



$$\cos \alpha \Rightarrow \frac{1}{\sqrt{5}} \Rightarrow \left(\frac{1}{\sqrt{5}} \right)$$

$$\sqrt{\pi^2 + 1} = \sqrt{5}$$

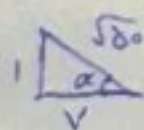
$$\cos \left(\alpha + \frac{\pi}{2} \right) = \cos \left(\frac{\pi}{2} + \alpha \right)$$

$$\cos^2 \alpha = \frac{91}{100}$$

$$\left(\frac{\sqrt{2}}{10} \right)^2 + \cos^2 \alpha = 1$$

$$\cos \alpha = -\frac{\sqrt{2}}{10}$$

$$\frac{1}{\sqrt{2}} = \tan \alpha \quad \sin \alpha = \frac{\sqrt{2}}{10}$$



$$\cos \alpha = \frac{\sqrt{2}}{10}$$

$$\sin \left(\frac{\pi}{2} + \alpha \right)$$

$$\sin \frac{\pi}{2} = -\frac{\sqrt{2}}{2}$$

$$\cos \frac{\pi}{2} = -\frac{\sqrt{2}}{2}$$

$$-\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} = -\frac{1}{10} = -\frac{1}{10}$$

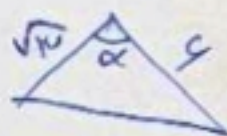
$$\begin{aligned} \sqrt{3} \sin^2 x + \cos^2 x &= \frac{1}{\sqrt{3}} \\ -\sin^2 x - \cos^2 x &= -1 \end{aligned}$$

$$\sin^2 x = \frac{1}{\sqrt{3}} \Rightarrow \boxed{\cos^2 x = \frac{\sqrt{3}}{\sqrt{3}}}$$

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

$$\tan^2 x = \frac{\sqrt{3}}{\sqrt{3}} - 1 = \frac{1}{\sqrt{3}}$$

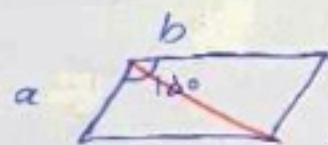
$$S_{\triangle} = \frac{1}{2} ab \sin C$$



$$S = \frac{1}{2} \times \sqrt{3} \times 1 \times \sin \alpha = \frac{1}{2} \Rightarrow \sin \alpha = \frac{1}{\sqrt{3}}$$

$$\frac{\sqrt{3} \times 1}{2} \times \frac{1}{\sqrt{3}} = \frac{1}{2} \Rightarrow \sin \alpha = \frac{1}{\sqrt{3}} \Rightarrow \alpha = \alpha_0 \text{ یا } 120^\circ$$

حداقل $\alpha_0 = \alpha$
حداکثر $120^\circ = \alpha$



$$S_{\triangle} = \frac{1}{2} ab \sin 120^\circ = \frac{1}{2} ab = 1 \Rightarrow ab = 2$$

$$a = b = \sqrt{2}$$

$$\frac{12}{12} = \frac{1}{\sqrt{3}}$$

تنها اعدادی که نسبت و شرط گفته شده را دارند



$$b_{\text{max}} = (12 + 12) \sqrt{2} = 24\sqrt{2}$$

$$= 90$$

$$\begin{aligned} & \left(\frac{1}{\sqrt{3}} \times \delta \times \sqrt{3} \times \sin A \right) - \left(\frac{1}{\sqrt{3}} \times \sqrt{3} \times \sqrt{3} \times \sin A \right) = 1 \sqrt{3} \sin A - (1 \sqrt{3} \sin A) = \\ & = \sin A (1 \sqrt{3} - 1 \sqrt{3}) = 1 \sqrt{3} \Rightarrow \sin A = \frac{1}{\sqrt{3}} \quad A = \alpha_0 = 30^\circ \\ & \tan 30^\circ = \frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{1}{\sqrt{3}} \end{aligned}$$

$$\frac{BM}{AB} = k \quad \frac{S_{BMN}}{S_{ABC}} = \frac{BM}{AB} \times \frac{BN}{BC}$$

$$= k \times 0.16 = \frac{1}{\sqrt{3}} \Rightarrow k = \frac{\delta}{9}$$

$$AM = AB - BM = AB(1 - k)$$

$$\frac{BM}{AM} = \frac{k}{1 - k} = \frac{\frac{\delta}{9}}{\frac{8}{9}} = \frac{\delta}{8}$$

$$\frac{BN}{NC} = \frac{\sqrt{3}}{\sqrt{3}} \quad BC = BN + NC$$

$$= BN + \frac{\sqrt{3}}{\sqrt{3}} BN = \frac{\delta}{\sqrt{3}} BN$$

$$\frac{BN}{BC} = \frac{\sqrt{3}}{\delta} = 0.16$$

مرحله 1

آتر یسا ا قاصا

$$| \cos \alpha | \left(\frac{\sin \alpha + 1}{| \cos \alpha |} \right) = \left(\tan \alpha + \frac{1}{\sqrt{\cos \alpha}} \right) | \cos \alpha |$$

$| \cos \alpha |$

$$| \cos \alpha | = \cos \alpha$$

اگر $0 < \cos \alpha$

$$\sin \alpha + 1 = -\sin \alpha + 1$$

$$\sin \alpha = 0 \rightarrow \text{روی محور}$$

نه در ناحیه پس

اگر $0 > \cos \alpha$ (ناحیه دوم یا سوم)

$$| \cos \alpha | = -\cos \alpha$$

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

که صحیح است

شرط دوم:

$$\cos \alpha \times -\frac{\sin \alpha}{\cos \alpha} = \frac{1}{\cot \alpha} = \frac{|\sin \alpha|}{\cos \alpha} \times \cos \alpha$$

$$-\sin \alpha = |\sin \alpha| \Rightarrow 0 > \sin \alpha$$

ناحیه ۳ یا ۴

پس α در ناحیه سوم است.