

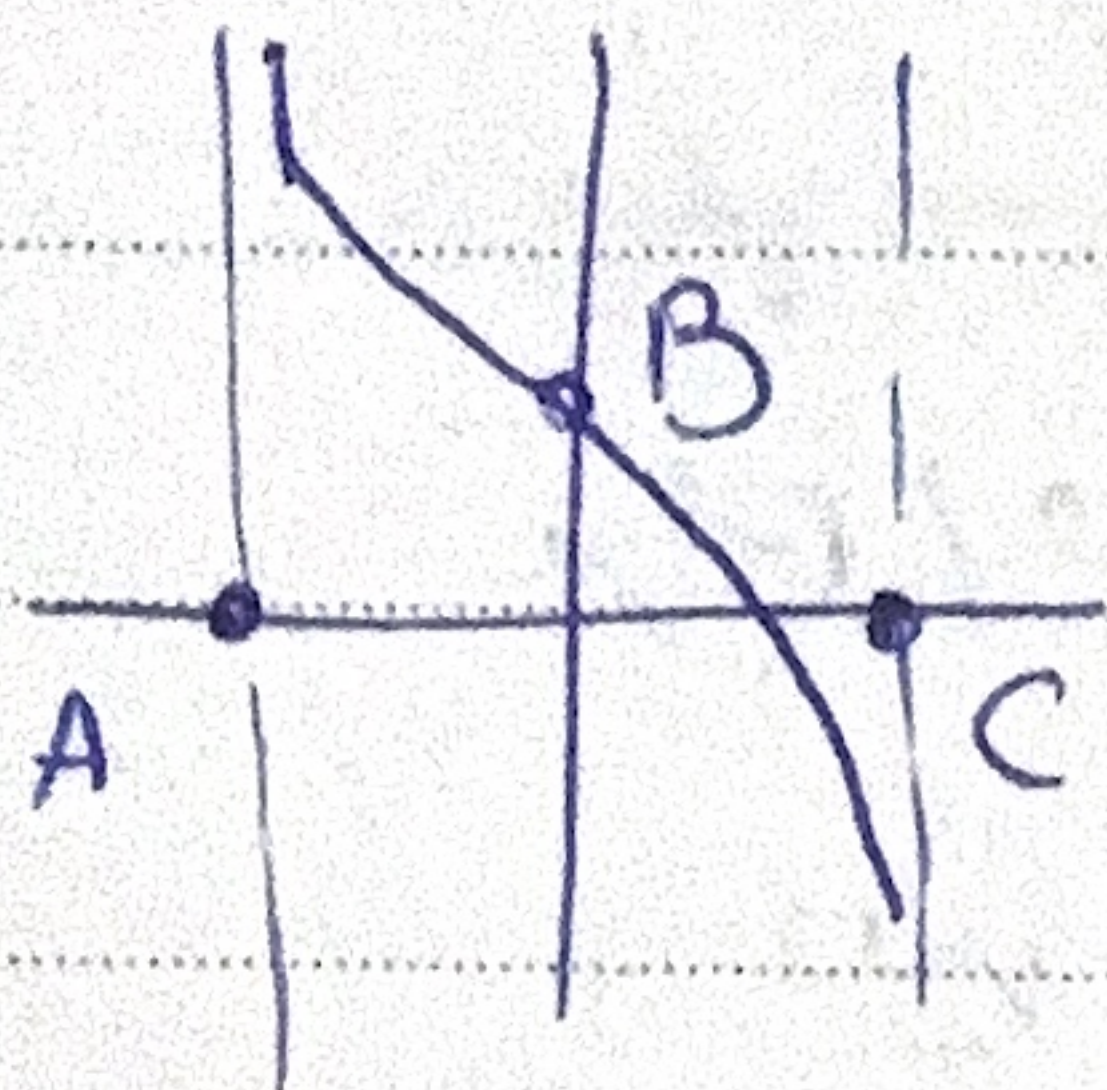
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۲۰ آفرین

تالیف ۱۵

بنا اصفهانی



$$y = \tan\left(-2x + \frac{\pi}{5}\right)$$

$$x=0 \Rightarrow y = \tan \frac{\pi}{5} = 1$$

$$\rightarrow B(0, 1)$$

$$T = \frac{2\pi}{|2|} = \pi$$

$$A: -2x + \frac{\pi}{5} = -\frac{\pi}{4} \rightarrow A\left(-\frac{\pi}{10}, 0\right)$$

$$C: -2x + \frac{\pi}{5} = \frac{\pi}{4} \rightarrow C\left(\frac{\pi}{10}, 0\right)$$

$$S_{\triangle ABC} = \frac{\pi}{4} \times 1 \times \frac{1}{2} = \frac{\pi}{8}$$

$$x = \frac{r}{\mu} \rightarrow \frac{r}{q} - \frac{r}{\mu} \sin \alpha - \frac{1}{\epsilon} (1 - \sin^2 \alpha) = 0$$

$$\rightarrow \frac{1}{\epsilon} \sin^2 \alpha - \frac{r}{\mu} \sin \alpha + \frac{1}{r^2} - \frac{q}{r^2} = 0 \xrightarrow{\times r^2} q \sin^2 \alpha - r \epsilon \sin \alpha + 1 = 0$$

$$\xrightarrow{\text{بشماره}} \sin^2 \alpha - r \epsilon \sin \alpha + 2r = (\sin \alpha - r)(\sin \alpha - 2r) = 0$$

$$\text{و چون } \frac{r}{\mu} = \frac{r}{q}$$

$$\frac{r}{q} = \frac{1}{\mu}$$

$$\rightarrow \sin \alpha = \frac{1}{r}$$

$$\tan \alpha = \frac{1}{r\sqrt{r}}$$

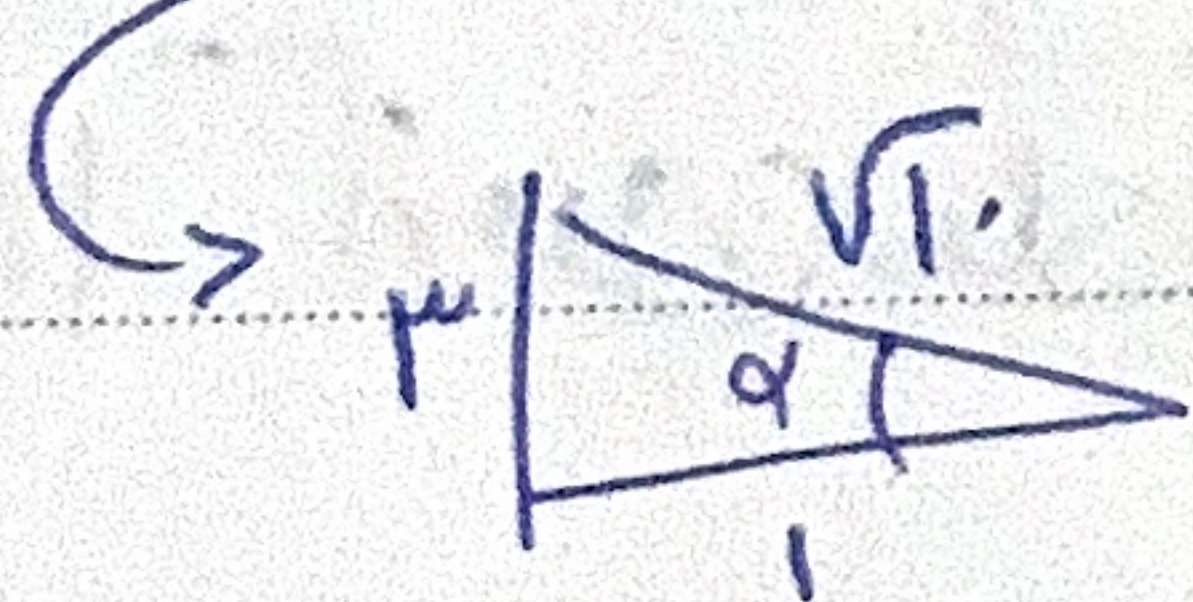
$$\Rightarrow 1 + \tan^2 \alpha = 1 + \frac{1}{r^2} = \frac{q}{r}$$

$$\lg \sin \alpha - \lg(-\cos \alpha) = \lg \frac{\sin \alpha}{-\cos \alpha} = \lg r$$

$$\rightarrow \frac{\sin \alpha}{\cos \alpha} = -r = \tan \alpha$$

با توجه به اینکه در تعریف داریم $\lg^a$ باید $\alpha > 0$ باشد

و صورت سوال $\cos$ علامت مثبت قرار دارد، پس $\sin$ منفی بوده است.



$$\sin \alpha = \frac{1}{\sqrt{r}}$$

$$\cos \alpha = -\frac{1}{\sqrt{r}}$$

$$\sin \alpha - \cos \alpha = \frac{r}{\sqrt{r}} = \frac{\epsilon \sqrt{r}}{1} = \sqrt{r}$$

$$\sin^2 \theta + \cos^2 \theta = \sin^2 \theta - \sin^2 \theta + 1 = \frac{r}{a} \rightarrow \sin^2 \theta - \sin^2 \theta + \frac{1}{a} = 0$$

$$\rightarrow \sin^2 \theta (\sin^2 \theta - 1) = -\frac{1}{a} = \sin^2 \theta (-\cos^2 \theta) \Rightarrow \sin^2 \theta \times \cos^2 \theta = \frac{1}{a}$$

$$\cos^2 \theta + \sin^2 \theta = \cos^2 \theta - \cos^2 \theta + 1 = \cos^2 \theta (\cos^2 \theta - 1) + 1 = -\sin^2 \theta \cos^2 \theta + 1$$

$$= -\frac{1}{a} + 1 = \frac{r}{a}$$

$$\frac{\sin x (r + \cos x)}{r(1 - \cos^2 x)} = \frac{\sin x (r + \cos x)}{r(\sin^2 x)} = \frac{r + \cos x}{r \sin x} \xrightarrow{+} \sin x < 0 \quad \text{وال ۱}$$

$$-1 < \cos x < 1 \Rightarrow r(r + \cos x) < r^2$$

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

$$\text{وال ۲} \rightarrow \text{تایید می شود}$$

$$\frac{r}{\sin n} + \frac{\mu}{\cos n} \rightarrow \frac{r}{\sin n} = \frac{-\mu}{\cos n} \rightarrow \frac{r}{-\mu} = \frac{\sin n}{\cos n} = \tan n$$

سوال 4

$$\rightarrow \cot n = -\frac{\mu}{r} \quad \tan n + \cot n = -\frac{r}{\mu} + \left(-\frac{\mu}{r}\right) = \frac{-\epsilon - 9}{2} = -\frac{13}{2}$$

$$\frac{\sqrt{1 + \sin \omega}}{\sin \omega + \sin 1} = ? \quad \sqrt{1 + \sin \omega} = \sqrt{1 + \cos \epsilon} = \sqrt{2 \cos^2 \frac{\epsilon}{2}} = \sqrt{2} \cos \frac{\epsilon}{2}$$

سوال 5

$$\sin(\omega) + \sin(1) = \sin(r_1 + r_2) + \sin(r_1 - r_2) = \sin r_1 \cos r_2 + \sin r_2 \cos r_1 + \sin r_1 \cos r_2 - \sin r_2 \cos r_1$$

$$= 2 \sin r_1 \cos r_2$$

$$\Rightarrow \frac{\sqrt{2} \cos \frac{\epsilon}{2}}{2 \sin r_1 \cos r_2} = \frac{\sqrt{2}}{2 \times \frac{1}{r}} = \sqrt{2}$$

$$\underbrace{(1 - r \sin^2 \omega)}_{\cos 1} \underbrace{(r \cos^2 1 - 1)}_{\cos r} \underbrace{\left(\frac{1 - \tan^2 r}{1 + \tan^2 r}\right)}_{\cos \epsilon} \times \frac{\sin 1}{\sin 1} = \frac{\frac{1}{p} \sin r}{\sin 1} \times \frac{\frac{1}{\epsilon} \sin \epsilon}{\sin 1 \cos 1 \cos r \cos \epsilon}$$

سوال 1

$$\Rightarrow \frac{\frac{1}{\lambda} \sin \lambda}{\sin 1} = \frac{\frac{1}{\lambda} \cos 1}{\sin 1} = \frac{1}{\lambda} \cot 1$$

Date:

Sub:

$$\omega \cos \alpha - 12 \cos \alpha = \omega (12 \cos \alpha - 1) - 12 \cos \alpha = 12 \cos \alpha - 12 \cos \alpha - \omega \quad \text{9th}$$

$$\sin \alpha + 12 \cos \alpha = 1 \rightarrow \sin \alpha = 1 - 12 \cos \alpha \xrightarrow{\text{put } \alpha} \sin^2 \alpha = 1 + 9 \cos^2 \alpha - 24 \cos \alpha = 1 - \cos^2 \alpha$$

$$\rightarrow 12 \cos^2 \alpha - 12 \cos \alpha = -1 \quad \text{like job } 12 \cos^2 \alpha - 12 \cos \alpha - \omega = -1 - \omega = -1$$

$$\cos^2 A / r = \frac{1 + \cos A}{r} = \sin B \sin C \rightarrow 1 + \cos A = r \sin B \sin C \quad \text{10th}$$

$$\cos A = \cos (\pi - (B + C)) = -\cos (B + C)$$

$$\rightarrow r \sin B \sin C = 1 - \cos (B + C) = 1 - \cos B \cos C + \sin B \sin C$$

$$\rightarrow \sin B \sin C + \cos B \cos C = 1 = \cos (B - C) \rightarrow B - C = 0 \rightarrow B = C = 45^\circ$$

$$A + B + C = 180^\circ \rightarrow A = 180^\circ - 2 \times 45^\circ = 90^\circ$$