

امروز یکشنبه

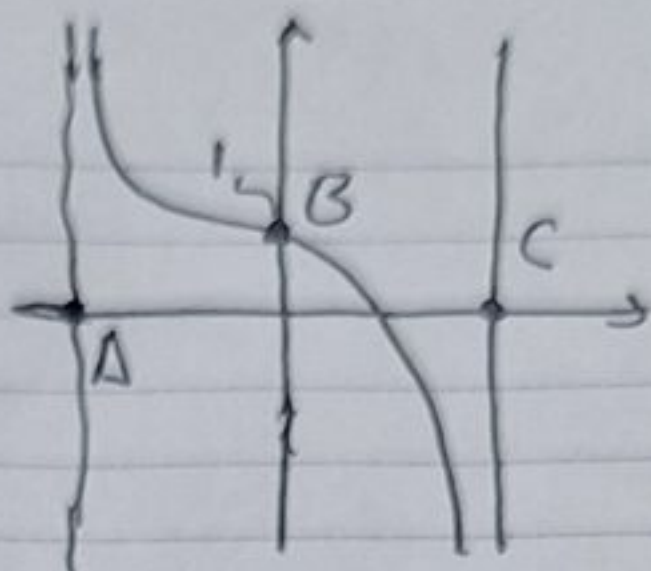
14

۲۹

یکشنبه
تیر

20 July
SUNDAY

2025 - 1404 $y = \tan\left(-\frac{\pi}{4} + \frac{\pi}{\varepsilon}\right)$



1

2

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

$T = \frac{\pi}{-1} \Rightarrow C - A = \frac{\pi}{1}$

$S_{ABC} = \frac{\pi \times 1}{1} = \frac{\pi}{\varepsilon}$ ✓

3

$x' = (\sin x)x - \frac{1}{\varepsilon} \frac{\cos^2 x}{1 - \sin^2 x} = 0 \Rightarrow x'(\sin x)x - \frac{1}{\varepsilon} + \frac{\sin^2 x}{\varepsilon} = 0$

~~$x = \frac{r}{c} \Rightarrow \frac{r}{c} - \frac{r}{c} \sin x - \frac{1}{\varepsilon} \frac{\cos^2 x}{1 - \sin^2 x} = 0$~~

4

$x = \frac{r}{c} \Rightarrow \frac{r}{c} - \frac{r}{c} \sin x - \frac{1}{\varepsilon} (1 - \sin^2 x) = 0 \Rightarrow \sin^2 x - \varepsilon \sin x + r = 0$

$\Rightarrow (\sin x - \varepsilon)(\sin x - 1) = 0 \Rightarrow \sin x = \frac{1}{\varepsilon} \Rightarrow \cos^2 x = \frac{\varepsilon^2 - 1}{\varepsilon^2}$

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

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

5

$\Rightarrow |\tan x| = \frac{\varepsilon}{\sqrt{\varepsilon^2 - 1}}$ $\sin x \cos x = \frac{1}{\varepsilon} \Rightarrow \frac{\sin x}{\cos x} = \frac{1}{\varepsilon \cos^2 x}$

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

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

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

$\sin^2 x + \cos^2 x = \frac{\varepsilon^2}{\varepsilon^2 - 1} \Rightarrow \sin^2 x (\sin^2 x + 1) = \frac{\varepsilon^2}{\varepsilon^2 - 1} \Rightarrow \sin^2 x = \frac{\varepsilon^2 - 1}{\varepsilon^2}$

6

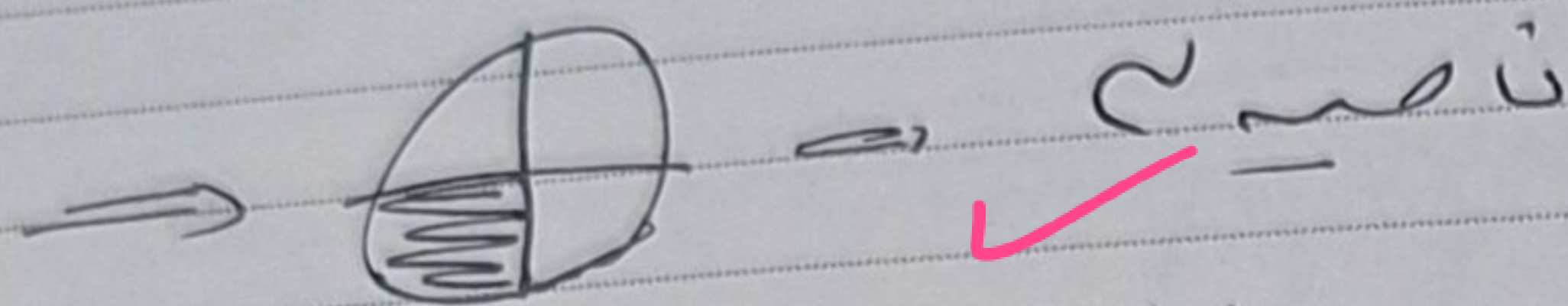
$\cos^2 x + \sin^2 x = \cos^2 x + \cos^2 x + \sin^2 x = (\cos^2 x + 1) \cos^2 x + 1 = \frac{\varepsilon^2}{\varepsilon^2 - 1}$ ✓

M		7	14	21	28
T	1	8	15	22	29
W	2	9	16	23	30
T	3	10	17	24	31
F	4	11	18	25	
S	5	12	19	26	
S	6	13	20	27	

2025 - 1404

$$\frac{r \sin \alpha + \sin \alpha \cos \alpha}{r - r \cos \alpha} < 0 \Rightarrow \frac{\sin \alpha (r + \cos \alpha)}{r(1 - \cos \alpha)} < 0 \Rightarrow \sin \alpha < 0$$

$$\sin \alpha \tan \alpha - \frac{1}{\cos \alpha} > 0 \Rightarrow \frac{\sin \alpha - 1}{\cos \alpha} > 0 \Rightarrow -\cos \alpha > 0 \Rightarrow \cos \alpha < 0$$



$$\frac{r}{\sin \alpha} + \frac{r}{\cos \alpha} = 0 \Rightarrow \frac{r \cos \alpha + r \sin \alpha}{\sin \alpha \cos \alpha} = 0$$

$$\tan \alpha \cot \alpha = \frac{r}{\sin \alpha} - \frac{1}{\sin \alpha \cos \alpha} =$$

$$\frac{\frac{r}{\sqrt{12}} + \frac{r}{\sqrt{12}}}{\frac{1}{\sqrt{12}}} = \frac{-1}{\sqrt{12}} = -\frac{1\sqrt{12}}{12}$$

$$\frac{1}{\cos \alpha} = 1 + \tan \alpha = \cos \alpha + \frac{r}{\sqrt{12}}$$

$$\sin^2 \alpha = 1 - \cos^2 \alpha = \frac{8}{12} \Rightarrow \sin \alpha = \pm \frac{2}{\sqrt{12}}$$

نقطه و فرقی ندارد کسینوس یا سینوس
کسینوس در میان صفا صفا است

$$\frac{\sqrt{1 + \sin 60^\circ}}{\sin 60^\circ + \sin 1^\circ}$$

$$(1 - \sin^2 \alpha)(r \cos^2 \alpha - 1) \frac{(1 - \tan^2 \alpha)}{(1 + \tan^2 \alpha)} = \cos 80^\circ \cos 10^\circ \cos 8^\circ$$

$$\cos^2 \alpha - \sin^2 \alpha = \cos 2\alpha$$

$$\cos 2\alpha$$

$$\frac{1}{2} \sin 2\alpha$$

$$\frac{1}{2} \sin 2\alpha$$

$$\frac{\sin 1^\circ \cdot \cos 1^\circ \cdot \cos 8^\circ \cdot \cos 8^\circ}{\cos 1^\circ} = \frac{1}{2} \sin 2^\circ \cdot \cos 8^\circ \cdot \cos 8^\circ$$

$$\frac{1}{2} \sin 2^\circ \cdot \cos 8^\circ \cdot \cos 8^\circ$$

$$\frac{1}{2} \cos 1^\circ$$

$$\sin \alpha + r \cos \alpha = r \Rightarrow \sin \alpha = r - r \cos \alpha = r(1 - \cos \alpha)$$

$$\Rightarrow 1 - \cos \alpha = r(1 - \cos \alpha) \Rightarrow 1 - \cos \alpha = r(1 - \cos \alpha) \Rightarrow 1 - \cos \alpha = r(1 - \cos \alpha)$$

$$\Rightarrow 1 - \cos \alpha = r(1 - \cos \alpha) \Rightarrow 1 - \cos \alpha = r(1 - \cos \alpha)$$

$$\frac{1 + \cos \alpha}{r} = \cos \alpha \Rightarrow 1 + \cos \alpha = r \cos \alpha \Rightarrow 1 = r \cos \alpha - \cos \alpha$$

$$0 \cos \alpha = 1 \cos \alpha \Rightarrow 0 = 1$$

M		7	14	21	28
T	1	8	15	22	29
W	2	9	16	23	30
T	3	10	17	24	31
F	4	11	18	25	
S	5	12	19	26	
S	6	13	20	27	

$$\sqrt{1+\sin 2\theta} = \sqrt{1+\cos 2\theta} \xrightarrow{\text{قوسین کلاسیک}} \sqrt{1+\cos 2\theta} = \sqrt{2\cos^2 \theta} = \sqrt{2} |\cos \theta| = \sqrt{2} \cos \theta \quad \underline{7}$$

$$\sin(A+B) + \sin(A-B) = \sin A \cos B + \cos A \sin B + \sin A \cos B - \cos A \sin B = 2 \sin A \cos B$$

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

$$\frac{\sqrt{2} \cos \theta}{\cos \theta} = \boxed{\sqrt{2}}$$

$$\cos \frac{A}{2} = \frac{1+\cos A}{2} \rightarrow 2 \sin B \sin C = 1 + \cos A \xrightarrow{A+B+C=\pi} A = \pi - (B+C) \quad \underline{10}$$

$$1 + \cos(\pi - (B+C)) = 1 - \cos(B+C) = 2 \sin B \sin C$$

$$1 - \cos B \cos C + \sin B \sin C = 2 \sin B \sin C \rightarrow \sin B \sin C + \cos B \cos C = 1$$

$$\cos(B-C) = 1 \rightarrow \begin{cases} B-C=0 \checkmark \\ B-C=2\pi \times \text{عدد} \end{cases} \rightarrow B=C \rightarrow A = 180^\circ - 180^\circ = 0^\circ$$

$B+C = 2B \quad (2 \times 90)$