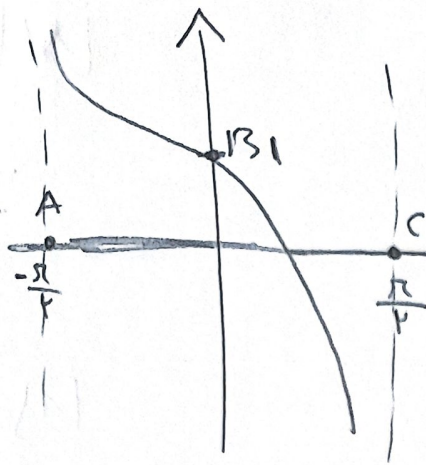


تلف نما و ۱۵

تلف ریاضی و تاریخ و وقت ۱۵

۱



$$y = \tan\left(-\frac{\pi}{4} + \frac{\pi}{4}\right) = \tan \frac{\pi}{4} = 1$$

$$\tan x \text{ (موجب)} = \frac{\pi}{4} = \frac{\pi}{4}$$

$$\angle AC = \frac{\pi}{4} - \left(\frac{\pi}{4}\right) = \pi \rightarrow S_{ABC} = \frac{1 \times 1}{2} = \frac{\pi}{4}$$

۲

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

$$x^2 - \sin x x - \frac{1}{k}(1 - \sin^2 x) = 0 \rightarrow x^2 - (\sin x)x - \frac{1}{k} + \sin^2 x = 0 \quad x = \frac{\pi}{4}$$

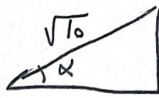
$$\frac{\pi}{4} - \frac{\pi}{4} \sin x - \frac{1}{k} + \sin^2 x = 0 \rightarrow \frac{14-9}{100} = \frac{5}{100} \rightarrow \sin^2 x - \frac{\pi}{4} \sin x + \frac{5}{100} = 0$$

۳

$$\log(\sin x) - \log(-\cos x) = \log 10$$

$$\log \frac{\sin x}{\cos x} = \log 10$$

$$\frac{-\sin x}{\cos x} = 10 \rightarrow -\tan x = 10 \rightarrow \tan x = -10$$



$$\sin x = \frac{10}{\sqrt{101}} \quad \cos x = \frac{1}{\sqrt{101}}$$

موجب sin x و
موجب cos x
هست

$$\sin x - \cos x = \frac{10}{\sqrt{101}} - \frac{1}{\sqrt{101}} = \frac{9}{\sqrt{101}} \quad \frac{9}{\sqrt{101}} = \frac{10}{\sqrt{101}} - \left(-\frac{1}{\sqrt{101}}\right) = \frac{9}{\sqrt{101}}$$

$$\sin^2 \theta + \cos^2 \theta = \frac{9}{10} \rightarrow \sin^2 \theta - \sin^2 \theta + \frac{1}{10} = 0$$

۴

$$\frac{\sin^2 x + \cos^2 x}{\sin^2 x} < 0 \rightarrow \frac{\sin^2 x (1 + \cos^2 x)}{\sin^2 x} < 0 \rightarrow \sin^2 x < 0$$

$$\frac{\sin^2 x - 1}{\cos^2 x} = -\cos^2 x > 0 \rightarrow \cos^2 x < 0$$

موجب

۵

$$\frac{\cos^2 x + \sin^2 x}{\sin^2 x} = 0$$

۶

$$\sqrt{1 + \sin 2\theta}$$

$$\sin 2\theta + \sin 1,$$

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

$\downarrow$
 $\frac{1}{\cos \theta}$

$$\frac{\sin \theta + \cos \theta}{\cos \theta} \rightarrow$$