

$$\sin \alpha = \frac{OT}{OB} = \frac{1}{OB} \quad \left\{ \quad AB = \underbrace{OB}_{1} - OA = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha} \right.$$

ΔABC و ΔADC ارتفاع کی پر ایہ و قاعدہ کی دو پر ایہ دیکھی است:

$$\frac{S_{AD}^A}{S_{ADC}^D} = \gamma = \frac{\frac{1}{\gamma} AD \times AB \times \frac{\sqrt{\gamma}}{\gamma}}{\frac{1}{\gamma} AD \times AC \times \frac{1}{\gamma}} = \gamma = \sqrt{\gamma} \frac{AB}{AC} \rightarrow \frac{AB}{AC} = \frac{\gamma}{\sqrt{\gamma}} = \sqrt{\gamma}$$

$A(\frac{1}{\sqrt{2}}, \frac{\sqrt{2}}{2}), B(-\frac{\sqrt{2}}{2}, \frac{1}{\sqrt{2}}), C(0, -1)$

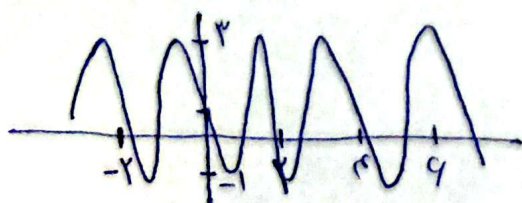
$$\underline{x = \cos \alpha} \rightarrow r \cos \alpha - \cos \alpha - \sin \alpha (r \sin \alpha - 1) = \underbrace{\cos \alpha (r \cos \alpha - 1)}_{\cos^2 \alpha} - \underbrace{\sin \alpha (r \sin \alpha - 1)}_{-\cos^2 \alpha}$$

$$\rightarrow \cos^2 \alpha + \sin^2 \alpha = \cos^2 \alpha (\cos^2 \alpha + \sin^2 \alpha) = \cos^2 \alpha = 1$$

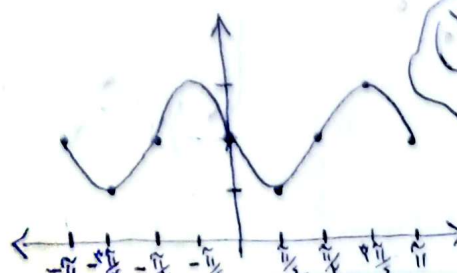
سوال ۵ $\cos^2 x + \sin^2 x = 1 \rightarrow \sin^2 x = 0 \rightarrow \sin x = 0$

$$y = -Y \sin(\tilde{\omega}x) + 1 \rightarrow T = \frac{Y}{\tilde{\omega}} = Y \quad \left(\because y = -\sin \tilde{\omega}x + 1 \rightarrow T = \frac{\tilde{\omega}}{1} = \tilde{\omega} \right)$$

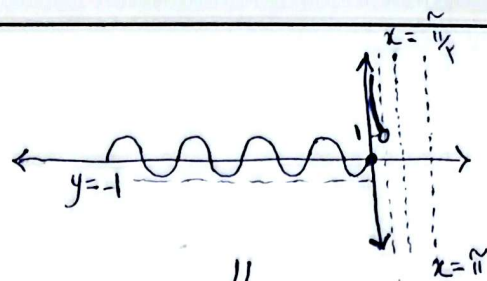
$$x \in [-\tilde{\eta}, \tilde{\eta}] \xrightarrow{\tilde{\eta} = \frac{1}{2} \sqrt{2}} x \in [-\frac{1}{2} \sqrt{2}, \frac{1}{2} \sqrt{2}]$$



$$(c) \quad y = -\sin x \rightarrow T = \frac{2\pi}{|a|} = \pi$$



$$f(x) = \begin{cases} \cot x & 0 < x < \frac{\pi}{4} \\ \sin x & x \leq 0 \end{cases}$$



سوال

$$R_f = [-1, +\infty)$$

$$f(x) = a + b \sin(cx) \cos(cx) \cos(2cx) = a + \frac{b}{4} \sin(4cx) = a + \frac{b}{4} \sin(4cx)$$

$$\rightarrow a = \frac{y_{\max} + y_{\min}}{2} = \frac{2 + 0}{2} = 1 \quad T = \frac{2\pi}{|4c|} = \frac{2\pi}{4c} = \frac{\pi}{2c} \rightarrow C = \frac{2}{\pi}$$

$$\Rightarrow f(x) = \frac{b}{4} \sin(2x) + 1 \xrightarrow{(\frac{\pi}{10}, 2)} = 2 = \frac{b}{4} + 1 \rightarrow b = 4 \rightarrow \frac{bc}{a} = \frac{4 \times \frac{2}{\pi}}{1} = \frac{8}{\pi}$$

سوال

سوال

$$f(x) = a \cos bx + c \rightarrow c = \frac{y_{\max} + y_{\min}}{2} = \frac{2 - 2}{2} = -1$$

$$\rightarrow |a| = \frac{y_{\max} - y_{\min}}{2} = \frac{2 - (-2)}{2} = 2 \xrightarrow{\text{مقدار}} a = -2$$

$$T = \pi \rightarrow \alpha = T + \frac{T}{2} \rightarrow \alpha = \frac{3\pi}{2} \rightarrow 2\alpha = \frac{3\pi}{1} \rightarrow \tan 2\alpha = +\infty$$

