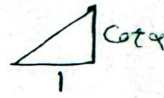


$$B = \frac{\pi}{2} - \alpha$$



$$1 + \cot^2 \alpha = \frac{1}{\sin^2 \alpha}$$

$$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot \alpha = \frac{TB}{1}$$

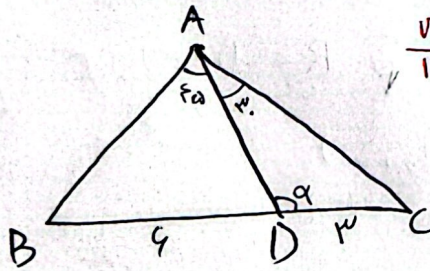
$$\sqrt{\frac{1}{\sin^2 \alpha}} = \left| \frac{1}{\sin \alpha} \right|$$

$$OA = 1$$

$$OB = \frac{1}{\sin \alpha}$$

$$\Rightarrow AB = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha}$$

(2)



$$\frac{\sqrt{2}}{12} = \frac{\sin \alpha}{\frac{1}{2}} = \frac{\sin \alpha}{AB}$$

$$\frac{1}{4} \cdot \frac{1}{\sin \alpha} = \frac{\sin \alpha}{AC}$$

$$\frac{\frac{\sin \alpha}{AB}}{\frac{\sin \alpha}{AC}} = \frac{AC}{AB} = \frac{\frac{\sqrt{2}}{12}}{\frac{1}{4}} = \frac{\sqrt{2}}{3}$$

$$\frac{AB}{AC} = \frac{3}{\sqrt{2}} = \sqrt{6}$$

$$\sin \alpha = \sin(\pi - \alpha)!$$

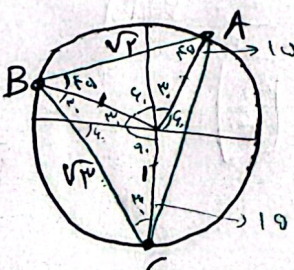
(2)

$$\cos A = \frac{1}{2}$$

$$A = 60^\circ$$

$$\sin B = \frac{1}{2}$$

$$B = 120^\circ$$



$$AB = \sqrt{1^2 + 1^2 + 1^2} = \sqrt{3}$$

$$\cos \alpha = \frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{2} \times \sqrt{1^2 + 1^2} = \frac{\sqrt{1^2 + 1^2}}{2}$$

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

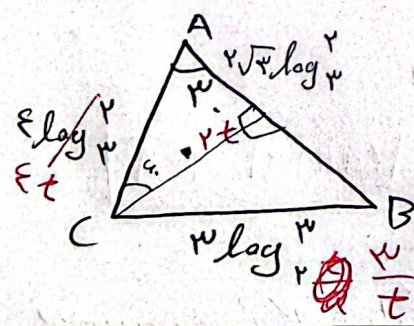
$$\frac{1}{2} = \frac{\sin \alpha}{BC}$$

$$AC = \sqrt{\frac{1}{4} + \frac{1 + \sqrt{3}}{2}}$$

$$1 = r \Rightarrow \text{درایه مشترک} \rightarrow AB = \sqrt{2}$$

$$BC = \sqrt{2}$$

(2)



$$\log_r t = t$$

$$\sqrt{9 - (\log_r t)^2} + 2\sqrt{t} (\log_r t)^2$$

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

$$S = \frac{1}{2} \times \frac{1}{2} \times r \times t \times \sqrt{9 - \epsilon t^2} + 2\sqrt{t} t$$

$$- \epsilon t^2 + \frac{9}{t^2} = \frac{- \epsilon t^2 + 9}{t^2} \Rightarrow \frac{\sqrt{9 - \epsilon t^2}}{t}$$

(2)

$$f(\cos \alpha) = \cos^2 \alpha - \cos^2 \alpha - \sin^2 \alpha (\cos^2 \alpha - 1)$$

$$\cos^2 \alpha (\cos^2 \alpha - 1) + \sin^2 \alpha (\cos^2 \alpha - 1) - \cos^2 \alpha$$

$$\sin^2 \alpha + \cos^2 \alpha = 1$$

$$\cos^2 \alpha (1) = 1$$

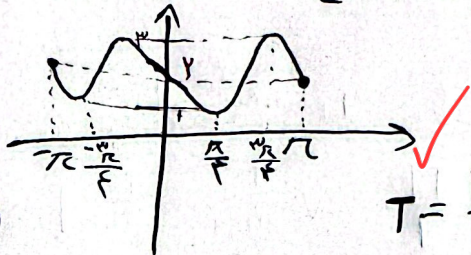
$$\cos^2 \alpha = 1$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \Rightarrow \sin^2 \alpha = 0$$

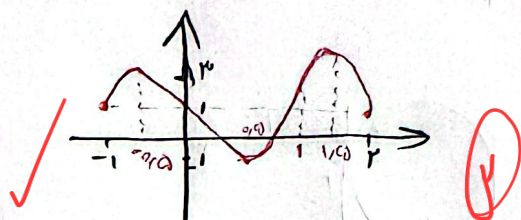
(2)

$$-r \sin x \cos x = -\sin 2x$$

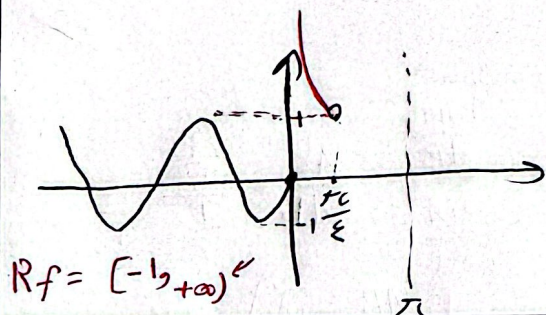
$$f(x) = -\sin 2x + r \quad [-\pi, \pi]$$



$$y \cos(\pi x + \frac{\pi}{4}) + 1 = -y \sin(\pi x) + 1$$



∴ $T = \frac{V_r}{r} = V$



Sinn $x \leq 0 \rightarrow R = [-61] \mathbb{I}$

$$\text{Cat } \pi \circ \pi \underset{F}{\xrightarrow{\pi}} R = (1, +\infty) \text{ II}$$

$$I \cup I I = [-1, +\infty)$$

$$\sin(x) \cos(x) = \frac{1}{2} \sin(2x) \rightarrow f(x) = a + \frac{b}{\varepsilon} \sin(\varepsilon x)$$

$$\frac{1}{\gamma} \sin(\gamma c x) \cos(\gamma c x) = \frac{1}{\gamma} \sin(\xi c x) \quad \frac{0+\xi}{\gamma} = \gamma = a \quad \frac{\xi-0}{\gamma} = \gamma = \frac{|b|}{\xi}$$

با توجه به c و شکل نمودار $b = 1$ و $a = 1$
 $161 = 1 \rightarrow$

$$T = \frac{\pi}{\omega} - \frac{\pi}{\omega} = \frac{5\pi}{\omega} - \frac{2\pi}{\omega} = \frac{3\pi}{\omega}$$

$$|f(C)| = 9 \quad (C > 0 \Rightarrow C = \frac{9}{4})$$

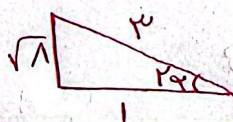
$$\frac{r-f}{r} = -1 = C \quad \frac{r}{|b|} = r \quad |b| = r \Rightarrow b = r$$

$$\frac{Y - (C - E)}{r} = |a| \Rightarrow a = -r$$

۲ غودار قرینہ شدہ نسبت بہ محور

$$f(x) = -2 \cos 2x - 1$$

$$C_0 \sin \alpha = \frac{1}{\mu}$$



$$|\tan \varphi| = \sqrt{1}$$

$$f(-w, a) = f(-1, a) = f(1, a)$$

$$f(1/\omega - i\gamma)$$

$$y = 1 - \frac{x}{y}$$

$$f\left(\frac{2}{3}\right) = 1 - \frac{\cancel{\frac{2}{3}}}{\cancel{\frac{2}{3}}} = \boxed{\frac{1}{3}} \checkmark$$

در هر دوره تناوب شکل نمودار متغیر را رسمید