

در $\triangle OAB$
 $OB^2 = OA^2 + AB^2$
 $OB = 1 + \tan^2 B = \frac{1}{\cos^2 B}$ — راه دوم یا اول

$OB = \frac{1}{\cos B} \rightarrow OB = \frac{1}{\sin \alpha}$ — $AB = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha}$
 $OA + AB = 1 + AB = \frac{1}{\sin \alpha}$

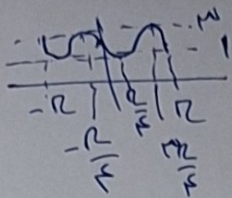
در $\triangle ABD$ نسبت
 $\sin \alpha = \frac{\sqrt{2} AB}{12}$ — $\frac{\sqrt{2}}{9} = \frac{\sin(180^\circ - \alpha)}{AB} = \frac{\sin \alpha}{AB}$

نسبت $\triangle ADC$
 $\frac{AB}{AC} = \frac{\frac{1}{\sqrt{2}}}{\frac{\sqrt{2}}{12}} = \frac{1}{2}$ — $\sin \alpha = \frac{AC}{9}$ — $\frac{\sin \alpha}{AC} = \frac{\frac{1}{9}}{\frac{1}{2}} = \frac{1}{6}$

الف — $S_{\triangle ABC} = S_{\triangle BOA} + S_{\triangle BOC} + S_{\triangle COA} = \frac{1}{2} \times 12 \times \left[1 + \frac{\sqrt{2}}{2} + \frac{1}{2} \right] = \frac{12 + 6\sqrt{2}}{2}$
 به کمک $\sin$ و $\cos$ نسبت در صورت سوال
 $\angle BOA \rightarrow \angle BOC \rightarrow \angle COA$
 $AB \hat{A} OB = 45^\circ$ — $\sqrt{2}$
 و $90^\circ - 45^\circ = 45^\circ$
 $\angle AOB \rightarrow 135^\circ$

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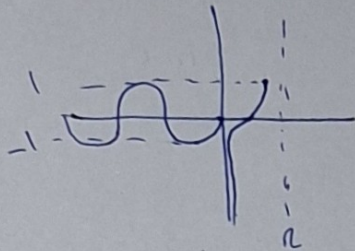
$x = \cos \alpha$ — $\frac{C^2 - C^2 + S^2}{C^2(C^2 - 1)} (C^2 - 1) + (C^2 - 1)(C^2 + S^2) = \cos^2 \alpha = 1$
 $\sin^2 \alpha = 0$



$$y = 2 \sin 2x$$

الف) $T = \frac{2\pi}{2} = \pi$

ب) $y = 2 \cos(2x + \frac{\pi}{2}) + 1 = 1 - 2 \sin(2x) = \cos(2x)$ $T = \frac{2\pi}{2} = \pi$



$$R = (-\infty, \infty)$$

$$f(x) = b \frac{\sin(cx)}{c} + a$$

برای این ستر $b=1$ و $a=2$

$$T = \frac{2\pi}{\omega} = \frac{2\pi}{10} = \frac{\pi}{5} \sim \frac{c}{\omega}$$

$$\frac{bc}{a} = \frac{1 \cdot \frac{\pi}{5}}{2} = \frac{\pi}{10}$$

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

$$b = 2$$

$$a = -1$$

$$c = -1$$

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

$$\cos(2x) = \frac{1}{2} \Rightarrow \cos(2x) = \frac{1}{2}$$

$$\tan = \sqrt{3}$$

$$-2x + 1 = -2x + 1 \rightarrow \frac{-2x}{2} + 1$$

از دست راست

$$-\frac{1}{2} \cdot \frac{2\pi}{2} + 1 = \frac{1}{2}$$

$$\left[x = \frac{1}{2} \right]$$

$$x = \frac{1}{2}$$

$$x = \frac{1}{2}$$