

در $\triangle OAB$ $OB^2 = OA^2 + AB^2$

$OB = 1 + \tan^2 B = \frac{1}{\cos^2 B}$ — راه دوم با اول (۲)

$OB = \frac{1}{\cos B} \rightarrow OB = \frac{1}{\sin \alpha}$

$OA + AB = 1 + AB = \frac{1}{\sin \alpha}$ — $AB = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha}$

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

$\frac{AB}{AC} = \frac{1}{\sqrt{2}}$ — $\frac{\sqrt{2}}{9} = \frac{\sin \alpha}{AC}$ — $\frac{AB}{AC} = \frac{1}{\sqrt{2}}$ (۲) ✓

$\sin \alpha = \frac{AC}{9}$

$\frac{\sin \alpha}{AC} = \frac{1}{9} = \frac{1}{9}$ (۲)

در $\triangle ABC$

$S_{\triangle ABC} = S_{\triangle BOA} + S_{\triangle BOC} + S_{\triangle COA} = \frac{1}{2} \times 12 \times \left[1 + \frac{\sqrt{2}}{2} + \frac{1}{2} \right]$ — الف — $\frac{\sqrt{2} + \sqrt{3}}{2}$ (۱) ✓

$AB = \sqrt{2}$ $BC = \sqrt{3}$ $AC = \sqrt{2 + \sqrt{3}}$

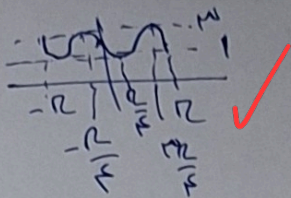
محیط = $\sqrt{2} + \sqrt{3} + \sqrt{2 + \sqrt{3}}$

$S = \frac{1}{2} \times AB \times AC \times \sin 120^\circ = \frac{1}{2} \times \log_2^{10} \times \log_3^{14} \times \frac{1}{2} = \frac{1}{2} \times \log_2^3 \times \log_3^4$ (۲)

$\frac{1}{2} \times 2 \times 3 \times \log_2^3 \times \log_3^4 = 3$

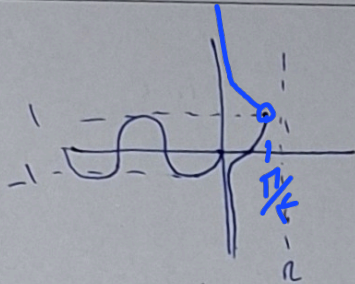
$x = \cos \alpha$ — $\frac{C^2 - C^2 + S^2}{C^2(C^2 - 1)} (C^2 - 1) + (C^2 - 1)(C^2 + S^2) = \cos 2\alpha = 1$

$\sin 2\alpha = 0$ (۲) ✓



$$y = 2 \sin 2x \quad (1) \quad T = \frac{2\pi}{2} = \pi \quad \text{النق}$$

$$y = 2 \cos\left(2x + \frac{\pi}{2}\right) + 1 = 1 - 2 \sin(2x) = \cos(2x) \quad T = \frac{2\pi}{2} = \pi \quad \text{ب. } T = \pi$$



$$R = (-\infty, 1]$$

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

(1)

$$f(x) = b \sin(cx) + a$$

ب. برای استر 1 و 2 و 3

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

$$\frac{b}{a} = \frac{1}{2} = \frac{\omega}{2} \quad (2) \quad \text{نق}$$

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

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

$$a = -1 \quad c = -1$$

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

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

(2)

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

$$-\frac{1}{2} \times \frac{2}{2} + 1 = \frac{1}{2}$$

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

$$x = -\frac{1}{2} \rightarrow \frac{1}{2}x = -\frac{1}{4}$$

(2)