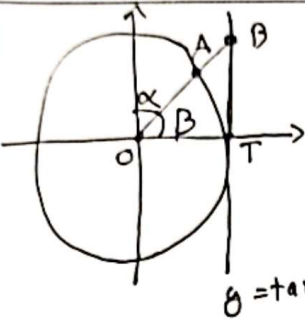


14, 15

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره کلاس:
 نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره کلاس:

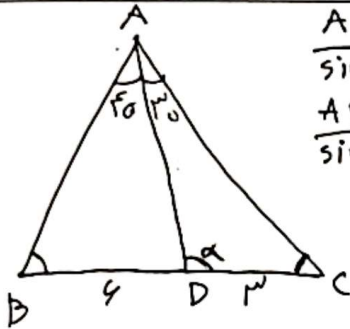


$$\left. \begin{aligned} BT = \tan \alpha &= \cot \alpha \\ OT = 1 \end{aligned} \right\} \rightarrow OB = \sqrt{1 + \cot^2 \alpha} = \frac{1}{\sin \alpha}$$

$$AB = OB - 1 = \left| \frac{1}{\sin \alpha} - 1 \right| \xrightarrow{OB > 1} OB = \frac{1}{\sin \alpha}$$

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

1, 15

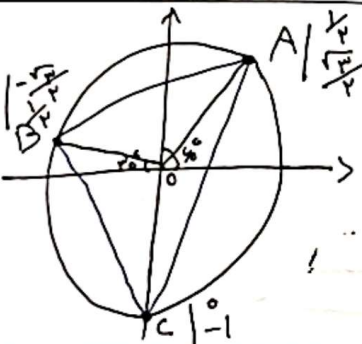


$$\frac{AD}{\sin B} = \frac{BD}{\sin A} = \frac{4}{\frac{1}{\sqrt{2}}} \Rightarrow \frac{\sin B}{\sin C} = \frac{AD}{\frac{AD}{4}} = \frac{1}{\sqrt{2}}$$

$$\frac{AD}{\sin C} = \frac{DC}{\sin A} = \frac{3}{\frac{1}{\sqrt{2}}} \Rightarrow \frac{\sin B}{\sin C} = \frac{AD}{\frac{AD}{4}} = \frac{1}{\sqrt{2}}$$

$$\frac{AB}{\sin C} = \frac{AC}{\sin B} \rightarrow \frac{AB}{AC} = \frac{\sin C}{\sin B} = \sqrt{2}$$

2



$$AB = \sqrt{\left(\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}} \right)^2 + \left(\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}} \right)^2} = \sqrt{2}$$

$$AC = \sqrt{\left(\frac{1}{\sqrt{2}} - 0 \right)^2 + \left(\frac{1}{\sqrt{2}} + 1 \right)^2} = \sqrt{2 + \sqrt{2}}$$

$$BC = \sqrt{\left(\frac{1}{\sqrt{2}} - 0 \right)^2 + \left(\frac{1}{\sqrt{2}} - 1 \right)^2} = \sqrt{2}$$

$$s = \frac{1}{\sqrt{2}} \left| \frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}} \right| = \frac{1}{\sqrt{2}} \left(\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} \right) = \frac{2}{\sqrt{2}} = \sqrt{2}$$



$$AH = f \log \frac{1}{\sqrt{2}} \times \cos 30^\circ = f \log \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2} = \frac{1}{2} \log \frac{1}{\sqrt{2}} \sqrt{3}$$

$$CH = \sqrt{(f \log \frac{1}{\sqrt{2}})^2 - (f \log \frac{1}{\sqrt{2}})^2} = \frac{1}{2} \log \frac{1}{\sqrt{2}}$$

$$BH = AH \times AB \rightarrow HB = \frac{CH}{AH} = \frac{f \log \frac{1}{\sqrt{2}}}{\frac{1}{2} \log \frac{1}{\sqrt{2}}} = \frac{2}{\sqrt{2}} \log \frac{1}{\sqrt{2}}$$

$$s = \frac{1}{\sqrt{2}} \times AC \times AB \times \sin 30^\circ = \frac{1}{\sqrt{2}} \times f \log \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} \log \frac{1}{\sqrt{2}} \times \frac{1}{2} = \frac{1}{4} \log \frac{1}{\sqrt{2}}$$

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

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

$$\cos^2 \alpha$$

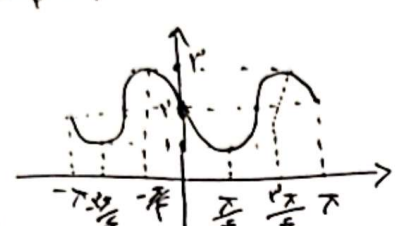
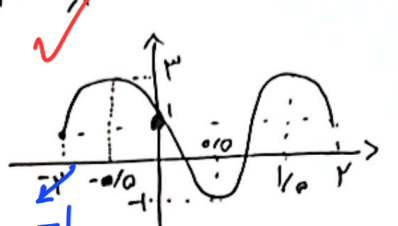
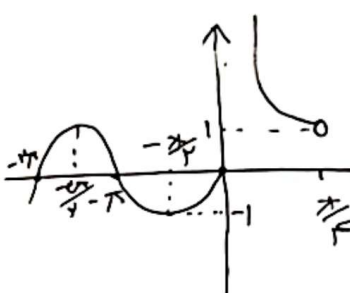
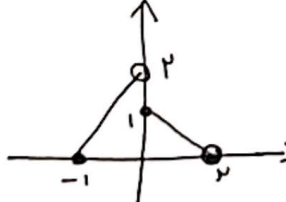
$$- \cos^2 \alpha$$

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

بقای و قرار دهم

$$\begin{aligned} 2\alpha &= 0 \rightarrow \sin 2\alpha = 0 \\ 2\alpha &= 2k\pi \end{aligned}$$

3

$y = -\sqrt{2} \sin x \cos x + 1 \quad [-\pi, \pi]$ $T = \frac{\pi}{\omega} = \pi$ 	$y = \sqrt{2} \cos(x + \frac{\pi}{4}) + 1 \quad [-\pi, \pi]$ $T = \frac{\pi}{\omega} = \pi$ 
$f(x) = \begin{cases} \cot x & 0 < x < \frac{\pi}{2} \\ \sin x & x \leq 0 \end{cases}$ $R = [-1, +\infty)$	
$f(x) = a + b \sin(cx) \cos(cx) \cos(cx) \rightarrow \frac{1}{4} \sin(3cx)$ $a + \frac{b}{4} \sin(3cx) \rightarrow \frac{1}{4} \sin(3cx)$ $T = \frac{\pi}{\omega} = \frac{\pi}{3\omega} \rightarrow \omega = \frac{3\pi}{T}$ $a + \frac{b}{4} \sin \alpha \rightarrow a + \frac{b}{4} = 1 \rightarrow a + b = 4 \rightarrow \sin \alpha = 1 \rightarrow b = 4 \rightarrow a = 0$ $a - \frac{b}{4} = 0 \rightarrow a = \frac{b}{4} \rightarrow \sin \alpha = -1 \rightarrow b = 4 \rightarrow a = 1$	$f(x) = 1 + \sqrt{2} \sin \alpha x$ $\frac{b}{a} = \frac{\frac{2}{\pi} \times \pi}{1} = 2$
$a \cos bx + c$ $T = \frac{\pi}{ b } = \pi$ $b = +2, -2 \rightarrow 2c = -2 \rightarrow c = -1$ چون $b > 0$ $\cos$ سے علامت ہے۔ چون $b < 0$ $\sin$ سے علامت ہے۔	$a \cos 2x + c = 0 \rightarrow -\sqrt{2} \cos 2x - 1 = 0$ $\cos 2x = -\frac{1}{\sqrt{2}}$ $1 + \tan^2 x = \frac{1}{\cos^2 x}$ $1 + \tan^2 x = 9 \rightarrow \tan x = \sqrt{8}$
	تابع با دو رخ تمام 3 درجہ زاویہ (90 و 270) میں ہر عدد $-\frac{\pi}{2}, \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}$ رضائے کثیر تا یہ عددی درایہ بازہ ہو۔ $-\frac{\pi}{2} + \frac{\pi}{2} = -1 + 2 = 1 \rightarrow f(1/2) = \frac{1}{2}$ خطیہ تابع بازہ $[0, 2]$ $y = -\frac{1}{2}x + 1$ $f(1/2) = -\frac{1}{2} \times \frac{\pi}{2} + 1 = -\frac{\pi}{4} + 1 = \frac{1}{4}$