حل تمرین ۱۱

۱) $\tan^2 1 + 1^2 = OB^2 \Rightarrow \frac{1}{\cos^2} = OB^2 \Rightarrow OB = \frac{1}{\cos x} \Rightarrow AB = \frac{1}{\cos x} - 1$

۲) $\frac{AC}{\sin\alpha} =$

۳)

۴) $S_{ABC}^{\triangle} = \frac{1}{2} \times AC \times AB \times \sin 30 \Rightarrow \frac{1}{2} \times \log_3^{27} \times \log_{27}^{9} \times \frac{1}{2} \Rightarrow \frac{11}{55} = \boxed{3}$

$\log_3^{27} \times \log_{27}^{9}$

$3\log_3^3 \times 2\log_3^3$

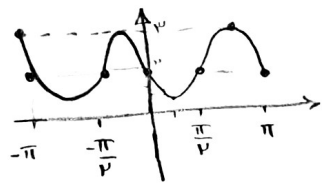
۵) $2\cos^4\alpha - \cos^2\alpha - \sin^2\alpha(\sin^2\alpha - \cos^2\alpha) \Rightarrow -(\sin^2\alpha - \cos^2\alpha)(\sin^2\alpha + \cos^2\alpha) = 1$

$-\cos^2\alpha \quad 1$

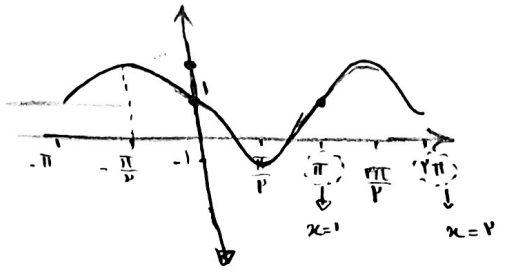
$\cos^2\alpha(\cos^2 - \sin^2)$ $\Rightarrow \cos^2\alpha = 1$

$-\cos^2\alpha(\sin^2\alpha - \cos^2\alpha)$ $\Rightarrow \sin^2\alpha = 0$

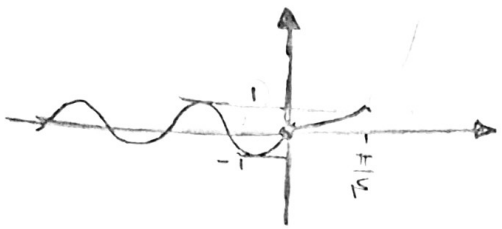
۶) الف) $y = -\sin 2a + 2 \Rightarrow T = \frac{2\pi}{|2|} = \pi$ $\Rightarrow$



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



(۷)



$\Rightarrow R_f = [-1, 1]$

(۸)

$f(x) = a + \frac{b}{2}\sin(12x)\cos^2 6x \longrightarrow a + \frac{b}{4}\sin(24x)$

$\Rightarrow T = \frac{\pi}{2} - \frac{\pi}{10} = \frac{4\pi}{10} \Rightarrow \frac{2\pi}{|24|} = \frac{4\pi}{10} \Rightarrow c = \frac{\pm 10}{8} \xrightarrow{c>0} \boxed{c = +\frac{5}{4}}$

$\Rightarrow a + \frac{b}{4} = 4$
$\Rightarrow a - \frac{b}{4} = 0 \Rightarrow \boxed{a = 2},\ \boxed{b = 8} \Rightarrow \frac{10}{2} = \boxed{5}$

(۹)

$c + a = 2$
$c - a = -4 \Longrightarrow c = -1$ ، $|a| = 3 \Rightarrow$ چون قرینه شده $\Rightarrow \boxed{a = -3}$

$T = \frac{2\pi}{|b|} = \pi \Rightarrow |b| = 2 \Rightarrow \boxed{b = 2}$

$-3\cos(2\alpha) - 1 = 0 \Rightarrow \cos 2\alpha = -\frac{1}{3} \Rightarrow |\sin\alpha| = \frac{2\sqrt{2}}{3}$

$\Rightarrow |\tan 2\alpha| \Rightarrow \left|\frac{\frac{2\sqrt{2}}{3}}{-\frac{1}{3}}\right| = 2\sqrt{2}$

(۱۰)

$f(2x - 11|a| + 0) \Rightarrow \boxed{f(0) = 1}$