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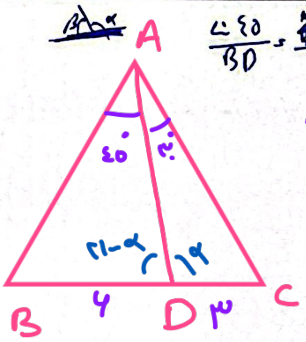
نام و نام خانوادگی ......کیمیا مسیبی...... پاسخنامه تشریحی تکلیف شماره ...۱۶... کلاس ...۱۲ ب ر...

$\tan O_1 = \frac{TB}{OT}$ $BT = \tan(\frac{\pi}{2} - \alpha) = \cot\alpha$ OA و OT شعاع‌های دایره هستند و طول آنها ۱ است. $OB^2 = OT^2 + BT^2 \rightarrow OB^2 = 1^2 + \cot^2\alpha \rightarrow OB^2 = 1 + \cot^2\alpha$ $OB^2 = \frac{1}{\sin^2\alpha} \rightarrow OB = \frac{1}{\lvert\sin\alpha\rvert} \xrightarrow{\text{حاده } \alpha} OB = \frac{1}{\sin\alpha}$ $AB + 1 = \frac{1}{\sin\alpha} \rightarrow AB = \frac{1}{\sin\alpha} - 1 \Rightarrow \frac{1 - \sin\alpha}{\sin\alpha}$	۰	۱
 $\frac{\sin 45}{BD} = \frac{\sin \hat{B}}{}$ $ADC \rightarrow \frac{\sin\hat{\alpha}}{AC} = \frac{\sin 30}{DC} \rightarrow AC = 6\sin\hat{\alpha}$ $ABD \rightarrow \frac{\sin(\pi - \alpha)}{AB} = \frac{\sin 45}{4} \rightarrow AB = 4\sqrt{2}\sin\hat{\alpha}$ $\frac{AB}{AC} = \frac{4\sqrt{2}\sin\alpha}{4\sin\alpha} = \sqrt{2}$	۰	۲
 $y_A = \sin\theta_2 = \frac{1}{2} \Rightarrow \theta_2 = 30^\circ$ $y_B = \cos O_1 = \frac{1}{2} \Rightarrow O_1 = 60^\circ$ $\Rightarrow S_{\triangle} = S_{A\hat{O}B} + S_{A\hat{O}C} + S_{\hat{O}BC} = \frac{1}{2}\times1\times1\times\sin(180-90-90) + \frac{1}{2}\times1\times1\times\sin(60+30) + \frac{1}{2}\times1\times1\times\sin(90+O_2) = \frac{3}{4} + \frac{\sqrt{3}}{4} + \frac{1}{4}$ $\boxed{\frac{3+\sqrt{3}}{4}}$ $A:(\frac{1}{2}, \frac{\sqrt{3}}{2})$ $B(-\frac{\sqrt{3}}{2}, \frac{1}{2})$ $C=(0,-1)$ $L_{AB} = \sqrt{\frac{(1+\sqrt{3})^2 + (1-\sqrt{3})^2}{4}} \Rightarrow L_{AB} = \sqrt{2}$ $L_{AC} = \sqrt{(\frac{1}{2})^2 + (\frac{\sqrt{3}+2}{2})^2} = \sqrt{\frac{1+3+4+4\sqrt{3}}{4}} = \sqrt{2+\sqrt{3}}$ $L_{BC} = \sqrt{\frac{3}{4} + \frac{9}{4}} = \sqrt{3}$ $\Rightarrow 2P = \sqrt{2} + \sqrt{2+\sqrt{3}} + \sqrt{3}$	۱/۷۵	۳
 $S_{A\hat{B}C} = \frac{1}{2} AC \times AB \times \sin A = \frac{1}{2} \times \log_2 32 \times \log_3 16 \times \frac{1}{2} = \frac{1}{2} \times \frac{3}{2} \times 4 \times \frac{1}{2} = \boxed{3}$	۲	۴
$2\sin^4\alpha - \sin^2\alpha - (\sin^2\alpha \cos 2\alpha) = ? \Rightarrow 2\cos^4\alpha - \cos^2\alpha - \sin^2\alpha(\cos^2\alpha - \sin^2\alpha)$ $= 2\cos^4\alpha - \cos^2\alpha - \frac{1}{2}\sin^2 2\alpha + \sin^4\alpha$ طبق نکته ★ $2\cos^4\alpha - \cos^2\alpha - 2\sin^4\alpha + \sin^2\alpha = 1$ $2(\cos^4\alpha - \sin^4\alpha) + \sin^2\alpha - \cos^2\alpha = 1$ $2\cos 2\alpha - \cos 2\alpha = 1 \rightarrow \cos 2\alpha = 1 \rightarrow \sin 2\alpha = 0$	۱/۲۵	۵

الف) $-\sin 2x + 2 \Rightarrow T = \frac{2\pi}{|b|} = \frac{2\pi}{2} = \pi$

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

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

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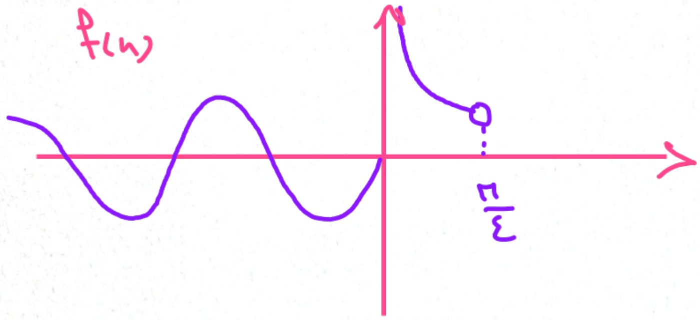

$R_f = [-1, +\infty)$

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$\sin x \cos x \cos 2x = \frac{1}{2}\sin 2x \cos 2x = \frac{1}{4}\sin 4x$

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

$a + \frac{b}{4}\sin 4cx \rightarrow T = \frac{4\pi}{10} \rightarrow \frac{2\pi}{|4c|} = \frac{2\pi}{5} \xrightarrow{c>0} c = \frac{5}{4}$

$\begin{cases} a+\frac{b}{4} = 4 \\ a-\frac{b}{4} = 0 \end{cases} \rightarrow a = 2,\ b = 8 \rightarrow \frac{bc}{a} = 5$

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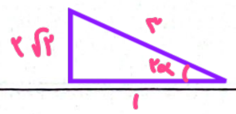
$\frac{2\pi}{|b|} = 2 \rightarrow b = \pm 2$ مثبت رفتن بودن طرح نیست $\rightarrow b = 2$

$f(0) = -4,\ f(\frac{\pi}{2}) = -4 \rightarrow \begin{matrix} a + c = -4 \\ -a + c = 2 \end{matrix} \rightarrow \begin{matrix} c = -1 \\ a = -3 \end{matrix}$

$f(2\alpha) = 0 \rightarrow -3\cos 2\alpha - 1 = 0 \rightarrow \cos 2\alpha = -\frac{1}{3}$



$\rightarrow |\tan 2\alpha| = 2\sqrt{2}$

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$f(-34.5) = f(-36 + 1.5) = f(3(-12) + 1.5) = f(1.5)$

$f(x) \begin{cases} -\frac{1}{2}x + 1 & ;\ 0 \leq x \leq 2 \\ 2x + 2 & ;\ -1 \leq x < 0 \end{cases} \rightarrow f(1.5) = -\frac{1}{2}(\frac{3}{2}) + 1 = \frac{1}{4}$

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