نام و نام خانوادگی ......سارا رضایی...... پاسخنامه تشریحی تکلیف شماره ۴/۱ ...... کلاس ......دوازدهم ریاضی A

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$$\frac{3}{\sin 30} = \frac{AC}{\sin\alpha} \Rightarrow AC = 6\sin\alpha \qquad (\sin 30 = \tfrac{1}{2})$$

$$\Rightarrow \frac{AB}{AC} = \frac{2}{\sqrt{2}} = \sqrt{2}$$

$$\frac{6}{\sin 45} = \frac{AB}{\sin(\pi-\alpha)} \Rightarrow AB = \frac{12}{\sqrt{2}}\sin\alpha \qquad (\sin 45 = \tfrac{\sqrt{2}}{2},\ \sin(\pi-\alpha)=\sin\alpha)$$

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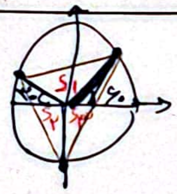

الف)

$$\frac{1}{2}\times1\times1\times1 = \frac{1}{2} = S_1$$

$$\frac{1}{2}\times1\times1\times\frac{\sqrt{3}}{2} = S_2 = \frac{\sqrt{3}}{4}$$

$$\frac{1}{2}\times1\times1\times\frac{1}{2} = S_3 = \frac{1}{4}$$

$$S_{ABC} = \frac{\sqrt{3}+3}{4}$$

ب)

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

$$AB = \sqrt{2} \quad BC = \sqrt{1+1-2\left(-\frac{1}{2}\right)} = \sqrt{3} \quad AC = \sqrt{1+1-2\left(-\frac{\sqrt{3}}{2}\right)} = \sqrt{2+\sqrt{3}}$$

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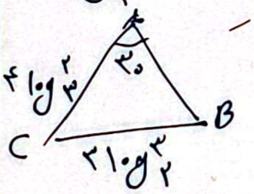
$$\log_3 2^4 = 4\log_3 2 \qquad \log_2 3^3 = 3\log_2 3$$



$$\frac{3\log_2 3}{\frac{1}{2}} = \frac{4\log_3 2}{\sin B}$$

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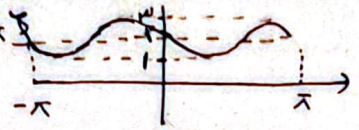
ب) $-\sin(\pi x) + 2$ $[-\pi, \pi]$

$\min = 1 \quad \max = 3$

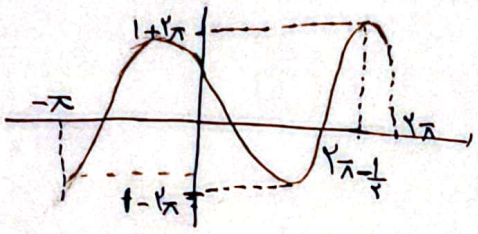
$T = \frac{2\pi}{2} = \pi$



ج) $2\pi \cos\left(x + \frac{1}{2}\right) + 1$

$\max = 1 + 2\pi$

$T = 2\pi \quad \min = 1 - 2\pi$



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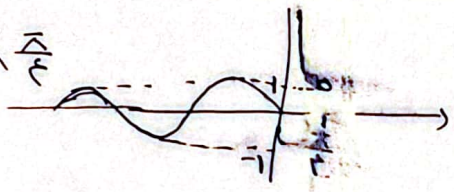
$$\begin{cases} \cot x & 0 < x < \frac{\pi}{4} \\ \sin x & x \leq 0 \end{cases}$$



$R_f \Rightarrow (-1, +\infty)$

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$a + b \underbrace{\sin(cx)\cos(cx)}_{\frac{1}{2}\sin(2cx)} \cos(2cx) = a + \frac{b}{4}\sin(4cx)$

$\underbrace{\qquad\qquad\qquad\qquad}_{\frac{1}{2}\sin(4cx)}$

$\frac{2\pi}{|4c|} = \frac{2\pi}{\omega} \Rightarrow c = \frac{\omega}{4}$

$b > 0 \quad a + \left|\frac{b}{4}\right| = 4 \quad a = 2 \quad \frac{bc}{a} = \frac{10}{2} = 5$

$a - \left|\frac{b}{4}\right| = 0 \quad b = 8$

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$a\cos(bx) + c \qquad a < 0 \Rightarrow -3\cos(2bx) - 1$

$|a| + c = 2 \quad c - a = 2 \quad c = -1$

$-|a| + c = -4 \quad c + a = -4 \quad a = -3$

$\pi = \frac{2\pi}{|b|} \Rightarrow b = \pm 2$

$-3\cos(2\alpha) - 1 = 0 \Rightarrow \cos(2\alpha) = \frac{-1}{3} \quad 1 + \tan^2(2\alpha) = \frac{1}{\cos^2(2\alpha)}$

$1 + \tan^2(2\alpha) = 9 \Rightarrow |\tan(2\alpha)| = 2\sqrt{2}$

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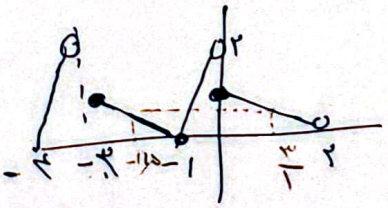
$f(-3\frac{1}{2}, \omega) = f\underbrace{(-\frac{1}{2}, \omega - 3\frac{1}{2})}_{\omega T} = f(-\frac{1}{2}, \omega)$



$f(-\frac{1}{2}, \omega) = \frac{1}{4}$