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

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$OA = 1$

$\cos 1 \times OB = OT$

$\sin a \times OB = OT'$

$\sin\alpha = \cos 1 \quad OB = \frac{1}{\sin a}$

$AB = OB - 1 \quad AB = \frac{1}{\sin a} - 1$ ✓

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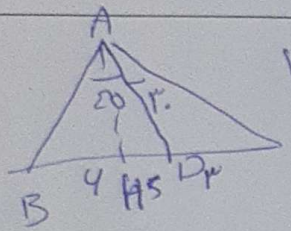

$\frac{1}{2} AH \times BD = S_{ABD}$

$\frac{1}{2} AH \times DC = S_{ADC}$

$\rightarrow S_{ABD} = 2 S_{ADC} \rightarrow AB \times AD \times \sin 40 = 2 AD \times AC \times \sin 20$ ✓

$\frac{AB}{AC} = \frac{2 \sin 30}{\sin 40} = \frac{2 \times \frac{1}{2}}{\sqrt{2}/2} = \frac{1}{\frac{\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

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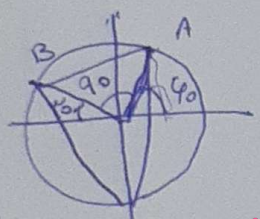

$S_{ABC} = S_{OAB} + S_{OBC} + S_{OAC}$

$\frac{1}{2} \times 1 \times 1 \times \sin 90 + \frac{1}{2} \times 1 \times 1 \times \sin 120 + \frac{1}{2} \times 1 \times 1 \times \sin 150$

$= \frac{2}{4} + \frac{\sqrt{3}}{4} + \frac{1}{4} = \frac{3+\sqrt{3}}{4}$ ✓

حب پاسن برگه نوشته شد!

الف) ۱٫۲۵

ب) طول وتر $= 2 \times 2 \sin(\frac{\pi}{2})$

$2 \times 1 \times \sin 30 + 2 \times 1 \times \sin 90 + 2 \times 1 \times \sin 60$

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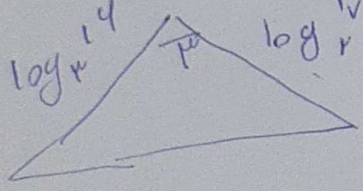

$S = \frac{1}{2} bc \sin A$

$\rightarrow S = \frac{1}{2} \log_2^{27} \times \log_4^{14} \times \frac{1}{3}$ ۱٫۵

$\frac{1}{2} \times 3 \log_2^3 \times 4 \log_2^2 \times \frac{1}{2} = \log_2^3 \times \log_4^4$ ۳

$= 3$

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$2\cos^4\alpha - \cos^2\alpha - 2\sin^4\alpha + \sin^2\alpha$

$= 0 \quad =$

$2(\cos^4\alpha - \sin^2\alpha)(\sin^2\alpha + \cos^2\alpha) - (\cos^2\alpha - \sin^2\alpha)$

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

$\cos^2 2\alpha = 1 \rightarrow \sin 2\alpha = 0$ ✓ ۲

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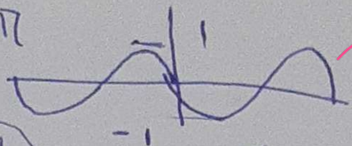
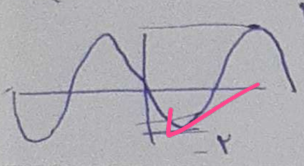
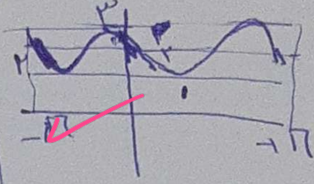
الف) $y = -\sin 2x + 2$ دوره تناوب $= \frac{2\pi}{2} = \pi$



ب) $2\cos(\pi x + \pi/2) + 1 = -2\sin(\pi x) + 1$



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



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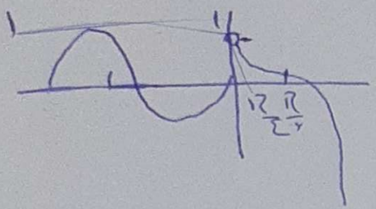
$\cot \frac{\pi}{4} = 1$



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

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$f(x) = a + b\sin(cx)\cos(cx)\cdot\cos(2cx)$

$= a + \frac{b}{2}\sin(2cx)\cos(2cx)$

$= a + \frac{b}{4}\sin(4cx)$

$\frac{2\pi}{4c} = \frac{2\pi}{5} \to c = \frac{5}{4}$ $\frac{b}{4} = 2 \to b = 8$ $a = 2$ $\frac{bc}{a} = \frac{8\times\frac{5}{4}}{2} = 5$

$\frac{5\pi}{10} - \frac{\pi}{10} = \frac{4\pi}{10} = \frac{2\pi}{5}$

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$\frac{2\pi}{b} = \pi \to b = 2$ $a = -3$ $c = -1$

$\to f(x) = -3\cos 2x - 1$

$f(x) = 0 \to 3\cos 2x = -1 \to \cos 2x = -\frac{1}{3}$

$1 + \tan^2 2x = \frac{1}{\cos^2 2x} = \frac{1}{\frac{1}{9}} = 9 \to \tan^2 2x = 8$

$\to |\tan 2x| = 2\sqrt{2}$

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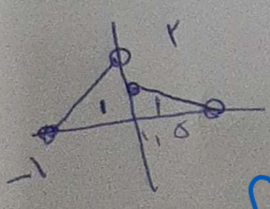

$f(-24/5) = ?$

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$f(-24{,}5) = f(-24 + 1{,}5) = f(2(-12) + 1{,}5) = f(1{,}5)$

$f(x) = \begin{cases} -\frac{1}{2}x + 1 & ; 0 \le x \le 2 \\ 2x + 2 & ; -1 \le x < 0 \end{cases}$

$\to f(1{,}5) = -\frac{1}{2}\left(\frac{3}{2}\right) + 1 = \frac{1}{4}$

ب - ۳

$BC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times -\frac{1}{2} = 1 + 1 + 1 = 3 \rightarrow BC = \sqrt{3}$

$AC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times -\frac{\sqrt{2}}{2} = 1 + 1 + \sqrt{2} \rightarrow AC = \sqrt{2+\sqrt{2}}$

$AB^2 = 1^2 + 1^2 \rightarrow AB = \sqrt{2}$

$P_{ABC} = \sqrt{2} + \sqrt{3} + \sqrt{2+\sqrt{2}}$