شماره تکلیف: ۲۶ | کلاس: یازدهم دختر A | نام: فاطمه بیشخی

$S_{\text{متوازی الاضلاع}} = 2x \times 3x \times \underbrace{\sin 30^\circ}_{\text{زاویهٔ کوچکتر بینشان}} = 6x^2 \times \frac{1}{2} = 3x^2 = 54 \Rightarrow x^2 = 18 \rightsquigarrow \boxed{x = 3\sqrt{2}}$

$\begin{cases} \text{ضلع بزرگ} = 9\sqrt{2} \\ \text{ضلع کوچک} = 6\sqrt{2} \end{cases} \quad \text{محیط} = 2(9\sqrt{2} + 6\sqrt{2}) = \boxed{30\sqrt{2}}$ 1

$S_{A\hat{B}C} = \frac{5 \times 7}{2} \sin \hat{A} = \frac{35}{2} \sin \hat{A}$

$S_{A\hat{D}E} = \frac{4 \times 7}{2} \times \sin \hat{A} = \frac{28}{2} \sin \hat{A}$

$\sin \hat{A} \left(\frac{7}{2}\right) = \frac{7}{4} \rightsquigarrow \sin \hat{A} = \frac{1}{2} \rightarrow \boxed{\hat{A} = 30^\circ}$

$\tan \hat{A} = \frac{\sqrt{3}}{3}$ 2

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1 + \sin\alpha}{|\cos\alpha|} \Rightarrow \frac{1 - (-\sin\alpha)}{|\cos\alpha|} = \frac{1 + \sin\alpha}{|\cos\alpha|} \Rightarrow \boxed{\cos\alpha > 0}$ ①

$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{\sin\alpha}{\cos\alpha} \Rightarrow \boxed{\sin\alpha < 0}$ ② 3

$\cos\alpha \neq 0$

①,② $\Rightarrow$ ناحیهٔ چهارم

$m_{\text{شیب خط}} = \frac{\frac{3}{2}}{-\frac{2}{1}} = -\frac{3}{4} = \tan\alpha \Rightarrow \cot\alpha = -\frac{4}{3}$

$\begin{matrix} 0 & 2 \\ 1.5 & 0 \end{matrix}$

$\tan\left(\frac{\pi}{2} - \alpha\right) = +\cot\alpha = \boxed{-\frac{4}{3}}$ 4

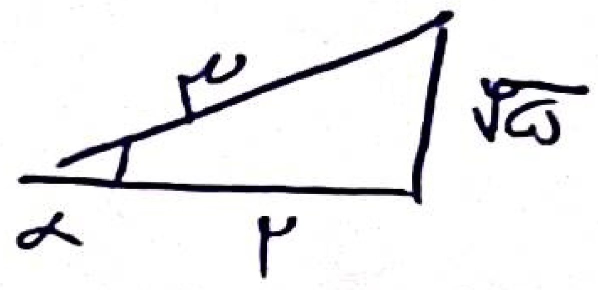
مضرب فرد از $\frac{\pi}{2}$

$\frac{3\cos\left(\frac{3\pi}{2} - 22\right) - 2\sin(\pi - 22)}{\sin(\pi + 22) - \cos\left(\frac{3\pi}{2} + 22\right)} = \frac{-3\sin 22 - 2\sin 22}{-\sin 22 - \sin 22} = \frac{-5\sin 22}{-2\sin 22} = \boxed{\frac{5}{2}}$ 5

$$\frac{+\cos\alpha-(-\sin\alpha)}{|\tan^2\alpha-1|} = \frac{+\frac{2}{3}-\frac{\sqrt5}{3}}{\frac14} = \frac{\frac{-(2+\sqrt5)}{3}}{\frac14} = \boxed{\frac{+4(2\mp\sqrt5)}{3}}$$ جواب ★ 6

$\tan^2\alpha+1=\frac{1}{\cos^2} \rightsquigarrow \boxed{\pm\frac{\sqrt5}{2}=\tan}\ \boxed{\frac{2\sqrt5}{5}=\cot}$

$\sin\alpha=-\frac{\sqrt5}{3}$



$\sin^2_x+\cos^2_x=1$ می‌دانیم

$\cos x=t$

$\sin x=2t$

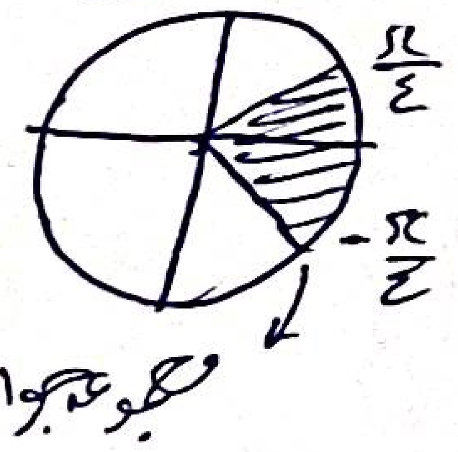
$4t^2+t^2=1 \Rightarrow \frac{1}{5}=t^2 \Rightarrow \boxed{\frac{\sqrt5}{5}=t=\cos\alpha}$ ★ 7

$(m^2-1)y=-2mx+3 \Rightarrow y=\frac{-2m}{m^2-1}x+\frac{3}{m^2-1} \Rightarrow \underbrace{\frac{-2m}{m^2-1}}_{\tan 60}=\sqrt3$

$\sqrt3 m^2+2m-\sqrt3=0 \to \Delta=16$ $\begin{cases} m_1=\frac{1}{\sqrt3} \\ m_2=-\frac{3}{\sqrt3}\end{cases}$ جمع مقادیر m $=\frac{-2}{\sqrt3}=\boxed{-\frac{2}{3}\sqrt3}$ 8

اختلاف مقادیر $=\frac{4}{\sqrt3}=$ جواب ★

$-\tan\frac{\pi}{4}<\tan x<\tan\frac{\pi}{4} \Rightarrow \tan\alpha<\tan -x+\frac{\pi}{4}<\tan\frac{\pi}{2} \rightsquigarrow -1<\frac{1-m}{2+m}<1 \Rightarrow$



① $\frac{1-m-2-m}{2+m}=-\frac{2m-1}{2+m}<0$ $\quad -2 \quad -\frac12$ $\quad (-\infty,-2)\cup(-\frac12,+\infty)$ 9

② $0<\frac{1-m+2+m}{2+m} \Rightarrow \frac{3}{2+m}>0$ $\quad -2$ $\quad (-2,+\infty)$

① ∩ ② $=(-\frac12,+\infty)$

جواب

$\tan(2\pi-60)\cos(\pi+30)+\tan(\frac{5\pi}{2}+30)\sin(5\pi-60)=$

$-\tan60\times(-\cos30)-\cot30\times\sin60=-\sqrt3\times(-\frac{\sqrt3}{2})-\sqrt3\times\frac{\sqrt3}{2}=$

$\frac{3}{2}-\frac{3}{2}=\boxed{0}$

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