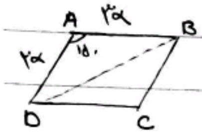
/ /

فاطمه موحدیان عطار - یازدهم تجربی A - تکلیف ۲۶

۱- 

$S_{ABCD} = 2 \times \frac{1}{2} \times AD \times AB \times \sin A = \cancel{2}a \times 3a \times \frac{1}{\cancel{2}} = 3a^2 = 54 \Rightarrow a = 3\sqrt{2}$

$2(AD + AB) = 10a = 30\sqrt{2}$

۲- $\left.\begin{aligned} S_{ABC} &= \frac{1}{2} \times AB \times AC \times \sin A = \frac{35}{2}\sin A \\ S_{ADE} &= \frac{1}{2} AE \times AD \times \sin A = \frac{28}{2}\sin A \end{aligned}\right\} \left|\frac{7}{2}\sin A\right| = 1.75$

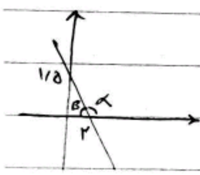
$\sin A = \frac{1}{2} \longrightarrow 30 \longrightarrow \tan 30 = \sqrt{3}/3$

$\sin A = \frac{-1}{2} \longrightarrow 150$ غ ق ق

۳- $\frac{1}{\sqrt{\cos^2\alpha}} - \tan\alpha = \frac{\cancel{1}}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1+\sin\alpha}{|\cos\alpha|} = \frac{\cancel{1}}{|\cos\alpha|} + \frac{\sin\alpha}{|\cos\alpha|}$

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

$\frac{|\sin\alpha|}{\cos\alpha} = -\tan\alpha = \frac{-\sin\alpha}{\cos\alpha} \Rightarrow |\sin\alpha| = -\sin\alpha \Rightarrow \sin\alpha < 0$

۴- 

$\tan\beta = \frac{1.5}{2} = \frac{3}{4}, \quad \beta = 180 - \alpha \Rightarrow \tan(180-\alpha) = \frac{3}{4}$

$\Rightarrow \tan(\pi - \alpha) = \frac{3}{4} \Rightarrow \tan\alpha = \frac{-3}{4}$

$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot\alpha = \frac{1}{\tan\alpha} = \frac{-4}{3}$

۵- $\frac{3\cos(270-22) - 2\sin(180-32)}{\sin(180+32) - \cos(270+32)} = \frac{3\cos\left(\frac{3\pi}{2}-32\right) - 2\sin(\pi-32)}{\sin(\pi+32) - \cos\left(\frac{3\pi}{2}+32\right)}$

$= \frac{-5\cancel{\sin 32}}{-2\cancel{\sin 32}} = \frac{5}{2} = 2.5$

۶- $\frac{\sin\left(\frac{\pi}{2}+\alpha\right) - \sin(\alpha - \pi)}{|\tan^2\alpha - 1|} = \frac{\cos\alpha + \sin\alpha}{|\tan^2\alpha - 1|} = \frac{\frac{2}{3} - \frac{\sqrt{5}}{3}}{\frac{1}{4}} = \frac{8 - 4\sqrt{5}}{3}$

$\cos\alpha = \frac{2}{3}, \quad \cos^2\alpha = \frac{4}{9}, \quad 1 - \cos^2\alpha = \sin^2\alpha = \frac{5}{9} \Rightarrow \sin\alpha = \frac{\overset{\text{غ ق ق}}{\pm}\sqrt{5}}{3} \longrightarrow -\frac{\sqrt{5}}{3}$

$\tan\alpha = \frac{-\sqrt{5}}{2}$

۷- $\sin\alpha = 2\cos\alpha \Rightarrow \tan\alpha = 2 \Rightarrow 1 + \tan^2\alpha = \frac{1}{\cos^2\alpha} = 5 \Rightarrow \cos^2\alpha = \frac{1}{5}, \quad \cos\alpha = \frac{\overset{\text{غ ق ق}}{\pm}\sqrt{5}}{5}$

$2mx+(m^2-1)y=3 \Rightarrow y=\frac{-2m}{m^2-1}x+\frac{3}{m^2-1}$ 8.

$\tan 60 = \sqrt{3} = \frac{-2m}{m^2-1} \Rightarrow \sqrt{3}m^2+2m-\sqrt{3}=0 \longrightarrow \frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{16}}{\sqrt{3}}=\frac{4}{\sqrt{3}}=\frac{4\sqrt{3}}{3}$

$\tan\left(\frac{\pi}{4}-x\right)=\frac{\tan\frac{\pi}{4}-\tan x}{1+\tan\frac{\pi}{4}\times\tan x}=\frac{1-\tan x}{1+\tan x}=\frac{1-m}{2+m}$ 9

$\frac{1-\tan x+1+\tan x}{1+\tan x}=\frac{1-m+2+m}{2+m} \Rightarrow \frac{2}{1+\tan x}=\frac{3}{2+m} \Rightarrow \frac{1+\tan x}{2}=\frac{2+m}{3}$

$1+\tan x=\frac{4+2m}{3}=\tan x=\frac{2m+1}{3} \longrightarrow -3<2m+1<3 \Rightarrow -2<m<1$

$\frac{-\pi}{4}<x<\frac{\pi}{4} \longrightarrow \tan x \longrightarrow (-1,1)$

$(-\sqrt{3})\left(\frac{-\sqrt{3}}{2}\right)+(-\sqrt{3})\left(\frac{\sqrt{3}}{2}\right)=0$ 10.