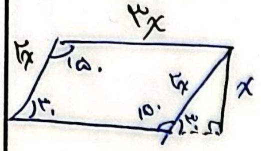
نام و نام خانوادگی ......ستایش امامی...... **پاسخنامه تشریحی تکلیف شماره** ..۲۶.... **کلاس** ..یازدهم تجربی A......

۱

ضلع روبه رو به ۳۰ نصف وتر است



$S = \frac{3x \times x}{2} = 54$ (18)

$x^2 = 36$

$x = 6$

محیط

$2(3x + 2x) = 10x$

$10 \times 6 = 60$

۲

$S_{A\hat{B}C} = \frac{1}{2} \sin A \times 5 \times 7 = 17.5 \sin \hat{A}$

$S_{A\hat{D}E} = \frac{1}{2} \sin A \times 7 \times 4 = 14 \sin \hat{A}$

$S_{A\hat{B}C} - S_{A\hat{D}E} = 17.5 \sin \hat{A} - 14 \sin \hat{A}$

$= 3.5 \sin \hat{A} = 1.75$

$\sin \hat{A} = \frac{1.75}{3.5} = \frac{1}{2}$

$\hat{A} < 30^\circ, 150^\circ$ $\xrightarrow{\text{حاده}}$ 30° ✓

$\tan 30^\circ = \frac{\sqrt{3}}{3}$

۳

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1}{|\cos\alpha|} + \frac{\sin\alpha}{|\cos\alpha|} \Longrightarrow \frac{\sin\alpha}{|\cos\alpha|} = (-)\frac{\sin\alpha}{\cos\alpha}$ $\cos\alpha$ منفی بوده است

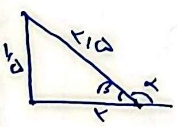
$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\frac{\cos\alpha}{\sin\alpha}} \rightarrow \frac{|\sin\alpha|}{\cos\alpha} = -\frac{\sin\alpha}{\cos\alpha}$

$\sin\alpha$ منفی بوده است

ناحیه سوم مثلثاتی است

۴

$\tan(\frac{\pi}{2} - \alpha) = \cot\alpha$



$\alpha + \beta = 180$

$\cot\alpha = -\cot\beta$

$\cot\beta = \frac{2}{1.5} = \frac{4}{3}$ $\quad \cot\alpha = -\frac{4}{3}$

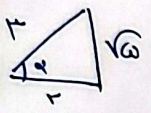
۵

$\frac{3\cos(240+x) - 2\sin(150+x)}{\sin(210-x) - \cos(300-x)} = \frac{3(-\frac{1}{2}\cos x + \frac{\sqrt{3}}{2}\sin x) + 2(-\frac{1}{2}\cos x + \frac{\sqrt{3}}{2}\sin x)}{(-\frac{1}{2}\cos x + \frac{\sqrt{3}}{2}\sin x) + (-\frac{1}{2}\cos x + \frac{\sqrt{3}}{2}\sin x)} = \frac{5}{2}$

$= 2.5$

۶

$$\frac{\cos\alpha - \sin\alpha}{1+\tan^2\alpha - 1} \longrightarrow \frac{\frac{3}{5} - \frac{4\sqrt{5}}{5}}{\frac{1}{5}} = \frac{3 - 4\sqrt{5}}{1} = 3 - 4\sqrt{5}$$



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

$\cos^2\alpha = \frac{4}{5}$

$\sin\alpha = -\frac{\sqrt{5}}{5}$

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$\sin^2\alpha + \cos^2\alpha = 1 \xrightarrow{\sin\alpha = 2\cos\alpha} 4\cos^2\alpha + \cos^2\alpha = 1 \quad 5\cos^2\alpha = 1$

$\cos^2\alpha = \frac{1}{5} \quad \cos\alpha = \pm\frac{1}{\sqrt{5}} = \pm\frac{\sqrt{5}}{5} \rightarrow -\frac{\sqrt{5}}{5}$ غ ق ق

۸

$\tan\theta = \sqrt{15} \quad (m^2-1)y = 3mx \quad y = \frac{3mx}{m^2-1}$

$\frac{-3m}{m^2-1} = \sqrt{15} \longrightarrow \sqrt{15}m^2 + 3m - \sqrt{15} = 0 \quad m^2 + 3\sqrt{15}m - 5 = 0 \Rightarrow m = -\frac{1}{\sqrt{15}}, \; m = \frac{\sqrt{15}}{3}$

$\frac{\sqrt{15}}{3} - \left(-\frac{1}{\sqrt{15}}\right) = \frac{4}{\sqrt{15}} \rightarrow \frac{4\sqrt{15}}{15}$

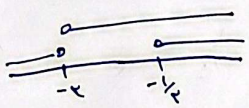
۹

$\tan\left(\frac{\pi}{2} - x\right) = +\cot x \qquad -1 < \cot x < 1$

$-\cot x \qquad -1 < -\cot x < 1 \rightarrow 1 > \cot x > -1$

$-1 < \frac{1-m}{2+m} < 1 \qquad \frac{m+2}{2+m} > 0 \qquad \frac{m}{m+2} < 0 \quad -2 < m < 0$ ①

$\frac{-m-3+1}{2+m} < 0 \qquad \frac{-m-1}{2+m} < 0 \qquad -\frac{1}{2} - \frac{-2}{1} - \left|-1\right|$ ②



① ∪ ② $\quad -2 < m < -\frac{1}{2}$ $\quad (-\infty, -2) \cup (-\frac{1}{2}, +\infty)$

۱۰

$\tan(360^\circ) = -\tan(90^\circ) = -\sqrt{15} \qquad \cos(98^\circ) = -\cos(180^\circ) = +\frac{2}{\sqrt{15}}$

$\tan(405^\circ) = \tan(135^\circ) = -1 \qquad \sin(135^\circ) = \sin(180^\circ) = +\frac{\sqrt{2}}{2}$

$\left|-\sqrt{15} \times -\frac{2}{\sqrt{15}}\right| + \left(-\sqrt{15} \times \frac{\sqrt{2}}{2}\right) = \frac{2}{3} - \frac{2}{3} = 0$