نام و نام خانوادگی ...شادی ترابی... پاسخنامه تشریحی تکلیف شماره ...۲۶... کلاس ...یازدهم دختر B...

۱

$$S = \frac{2x \times 3x \times \sin 150^\circ \times 2}{2} = 54 \Rightarrow x^2 = \frac{54 \times 2}{3} = 36 \Rightarrow x_1 = 6 \text{ ق ق}, \quad x_2 = -6 \text{ غ ق ق}$$

$$P = 2 \times 2x + 2 \times 3x = 10x = \boxed{60}$$

۲

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

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

$$\xrightarrow{S_{A\hat{B}C} > S_{A\hat{D}E}} \frac{35}{2}\sin\hat{A} - 14\sin\hat{A} = 1/75$$

$$\frac{35-28}{2}\sin\hat{A} = \frac{7}{4}$$

$$\Rightarrow \sin\hat{A} = \frac{1}{2} \xRightarrow[\text{حاده است } \hat{A}]{} \hat{A} = 30^\circ$$

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

۳

$$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha} = -\tan\alpha = \frac{-\sin\alpha}{\cos\alpha} \Rightarrow |\sin\alpha| = -\sin\alpha \Rightarrow \sin\alpha < 0 \quad (1)$$

$$\frac{1}{|\cos\alpha|} - \tan\alpha = \frac{1+\sin\alpha}{|\cos\alpha|} \Rightarrow -\tan\alpha = \frac{\cancel{1}+\sin\alpha-\cancel{1}}{|\cos\alpha|} \Rightarrow \frac{\sin\alpha}{-\cos\alpha} = \frac{\sin\alpha}{|\cos\alpha|} \Rightarrow |\cos\alpha| = -\cos\alpha$$

$\Rightarrow \cos\alpha < 0 \quad (2)$ $(1),(2) \Rightarrow$ انتهای کمان α در ناحیه سوم مثلثاتی است

۴

$$\sin\alpha = \sin(\pi-\alpha) = \sin\theta = \frac{\frac{3}{2}}{\frac{5}{2}} = \frac{3}{5}$$

$$x = \sqrt{\left(\frac{3}{2}\right)^2 + 2^2} = \frac{5}{2}$$

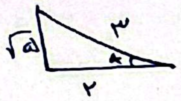
$$\cos\alpha = -\cos(\pi-\alpha) = -\cos\theta = -\frac{4}{5}$$

$$\tan\left(\frac{\pi}{2}-\alpha\right) = \frac{\sin(\frac{\pi}{2}-\alpha)}{\cos(\frac{\pi}{2}-\alpha)} = \frac{1 \times \cos\alpha - 0}{0 + 1 \times \sin\alpha} = \frac{\cos\alpha}{\sin\alpha} = \frac{-\frac{4}{5}}{\frac{3}{5}} = \boxed{-\frac{4}{3}}$$

۵

$$\frac{3\cos(180^\circ+68^\circ) - 2\sin(90^\circ+68^\circ)}{\sin(270^\circ-68^\circ) - \cos(360-68^\circ)} \underset{68^\circ=\alpha}{=} \frac{3\cos(\pi+\alpha) - 2\sin(\frac{\pi}{2}+\alpha)}{\sin(\frac{3\pi}{2}-\alpha) - \cos(2\pi-\alpha)} = \frac{-3\cos\alpha - 2\cos\alpha}{-\cos\alpha - \cos\alpha}$$

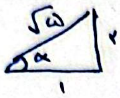
$$= \frac{-5\cos\alpha}{-2\cos\alpha} = \boxed{\frac{5}{2}}$$



$\Rightarrow$ ناحیه چهارم $\sin\alpha = -\frac{\sqrt{5}}{3}$ ، ناحیه چهارم $\tan = -\frac{\sqrt{5}}{2}$

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

$$\frac{\sin\alpha}{\cos\alpha} = \tan\alpha = 2 \Rightarrow$$



$$\Rightarrow |\cos\alpha| = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5} \xrightarrow[\text{α در ربع سوم}]{} \boxed{\cos\alpha = -\frac{\sqrt{5}}{5}}$$ ۷

$$y = \frac{-2m}{m^2-1}x + \frac{3}{m^2-1} \Rightarrow \frac{-2m}{m^2-1} = \tan 60 = \sqrt{3}$$

$$\sqrt{3}m^2 - \sqrt{3} = -2m \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0 \Rightarrow \Delta = 4 + 4\times 3 = 16$$

$$\Rightarrow \begin{cases} m_1 = \frac{\sqrt{16}-2}{2\sqrt{3}} = \frac{2}{2\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}} \\ m_2 = \frac{-\sqrt{16}-2}{2\sqrt{3}} = \frac{-8}{2\sqrt{3}} = \boxed{-\frac{4\sqrt{3}}{3}} \end{cases} \Rightarrow m_1 - m_2 = \frac{\sqrt{3}}{3} + \frac{4\sqrt{3}}{3} = \boxed{\frac{5\sqrt{3}}{3}}$$ ۸

$$\tan(\frac{\pi}{4} - x) = \frac{\sin(\frac{\pi}{4}-x)}{\cos(\frac{\pi}{4}-x)} = \frac{\frac{\sqrt{2}}{2}\cos x - \frac{\sqrt{2}}{2}\sin x}{\frac{\sqrt{2}}{2}\cos x + \frac{\sqrt{2}}{2}\sin x} = \frac{\cos x - \sin x}{\cos x + \sin x} = A$$

$$\frac{\sqrt{2}}{2} < \cos x \leq 1 \ , \ -\frac{\sqrt{2}}{2} < \sin x < \frac{\sqrt{2}}{2} \Rightarrow \begin{cases} \min: \cos x = \frac{\sqrt{2}}{2} \ , \ \sin x = \frac{\sqrt{2}}{2} \Rightarrow A = 0 \\ \max: \cos x = 1 \ , \ \sin x = 0 \Rightarrow A = 1 \end{cases}$$

$$\Rightarrow 0 \leq A \leq 1$$

$$0 \leq \frac{1-m}{2+m} \leq 1 \ \begin{cases} \rightarrow 0 \leq \frac{1-m}{2+m} \Rightarrow -2 < m \leq 1 \ (1) \qquad (1)\cap(2) = \boxed{[-\frac{1}{2}, 1]} \\ \rightarrow \frac{1-m}{2+m} - 1 \leq 0 \Rightarrow \frac{-2m-1}{2+m} \Rightarrow m \geq -\frac{1}{2} \ , \cup \ m < -2 \ (2) \end{cases}$$ ۹

$$\tan(360-60) \times \cos(270-60) \times \tan 120 \times \sin 120 = (-\tan 60) \times (-\cos 30) \times (-\tan 60) \times \sin 60$$

$$= (-\sqrt{3})(-\frac{\sqrt{3}}{2})(-\sqrt{3}) \times \frac{\sqrt{3}}{2} = \boxed{-\frac{9}{4}}$$ ۱۰