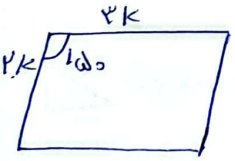
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۶ ... کلاس یازدهم دبیرانی گروه

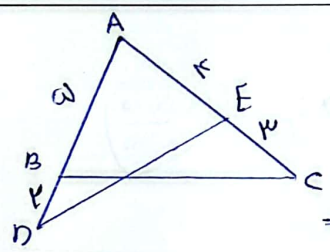
۱



$S = \omega\epsilon = (9k^2 \times \frac{1}{2}) \Rightarrow k = 3$

$P_{\text{محیط}} = 2(9+9) = 36$

۲



$S_{ABC} - S_{ADE} = 12\sqrt{3}$

$\Rightarrow \frac{1}{2} \times 5 \times 7 \times \sin A - \frac{1}{2} \times 4 \times 7 \times \sin A = 10\sqrt{3}$

$\Rightarrow (\frac{35}{2} - \frac{28}{2}) \sin A = \frac{7}{2} \sin A = \frac{7}{4}$

$\Rightarrow \sin A = \frac{1}{2} \Rightarrow A = 30^\circ \Rightarrow \tan A = \tan 30^\circ = \frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

۳

۱) $\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha}$ ، ۲) $\frac{1}{\sqrt{\cos^2\alpha}} - \tan\alpha = \frac{1+\sin\alpha}{|\cos\alpha|}$ ناحیه ۳

۲) $\frac{1}{|\cos\alpha|} - \frac{1+\sin\alpha}{|\cos\alpha|} = \tan\alpha \Rightarrow \frac{1-(1+\sin\alpha)}{|\cos\alpha|} \Rightarrow \frac{\sin\alpha}{\cos\alpha} \Rightarrow \frac{-\sin\alpha}{|\cos\alpha|}$

$\Rightarrow \frac{-1}{|\cos\alpha|} \Rightarrow \frac{1}{\cos\alpha} \Rightarrow |\cos\alpha| \Rightarrow \cos\alpha > 0$ ناحیه ۱ و ۴

۱) $\frac{|\sin\alpha|}{\cos\alpha} = \frac{-\sin\alpha}{\cos\alpha} \Rightarrow |\sin\alpha| = -\sin\alpha \Rightarrow \sin\alpha < 0$ ناحیه ۳ و ۴

۴

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

$m = \frac{\Delta y}{\Delta x} = \frac{-12}{8} = -\frac{3}{4} \Rightarrow \tan\alpha = -\frac{3}{4}$

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

۵

$\frac{3\cos(240^\circ) - 2\sin(150^\circ)}{\sin(202^\circ) - \cos(292^\circ)} = ?$ ۲۱۵

$\begin{cases} \cos(270-22) \Rightarrow -\sin 22 \\ \sin(180-22) \Rightarrow \sin 22 \\ \sin(180+22) \Rightarrow -\sin 22 \\ \cos(270+22) \Rightarrow \sin 22 \end{cases} \Rightarrow \frac{-3\sin 22 - 2\sin 22}{-\sin 22 - \sin 22} = \frac{-5\sin 22}{-2\sin 22}$

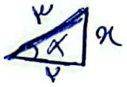
۶

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

$$\begin{cases}\sin\left(\alpha+\frac{\pi}{2}\right)=\cos\alpha \\ \sin(\alpha-\pi)=\sin(-(\pi-\alpha))=-\sin(\pi-\alpha)=-\sin\alpha\end{cases}\Rightarrow \text{با جمع}$$

$$x=\sqrt{3^2-2^2}=\sqrt{5} \Rightarrow \sin\alpha=-\frac{\sqrt{5}}{3},\ \tan\alpha=-\frac{\sqrt{5}}{2}$$

$\sin 2\alpha \cdot \tan 2\alpha$ ، مثلث زیر را رسم کنید



۷

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

$$\Rightarrow 5\cos^2\alpha=1 \Rightarrow \cos^2\alpha=\frac{1}{5}$$

$\Rightarrow$ زاویه α در ربع سوم $\Rightarrow \cos\alpha<0 \Rightarrow \cos\alpha=-\frac{1}{\sqrt{5}}\times\frac{\sqrt{5}}{\sqrt{5}}=\boxed{-\frac{\sqrt{5}}{5}}$

۸

$$2mx+(m^2-1)y=3$$

$$\tan 60^\circ=\sqrt{3}=\frac{-2m}{m^2-1} \Rightarrow \sqrt{3}m^2-\sqrt{3}=-2m \Rightarrow \sqrt{3}m^2+2m-\sqrt{3}=0$$

اختلاف: $\frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{4+12}}{\sqrt{3}}=\frac{\sqrt{16}}{\sqrt{3}}=\frac{4}{\sqrt{3}}\times\frac{\sqrt{3}}{\sqrt{3}}=\boxed{\frac{4\sqrt{3}}{3}}$

۹

$$\tan\left(\frac{\pi}{4}-x\right)=\frac{1-m}{2+m} \qquad -\frac{\pi}{4}<x<\frac{\pi}{4} \qquad m=؟$$

$$\frac{\pi}{4}>-x>-\frac{\pi}{4} \xrightarrow{+\frac{\pi}{4}} \frac{\pi}{2}>\frac{\pi}{4}-x>0$$

$$\frac{1-m}{2+m}>0 \Rightarrow \begin{array}{c|ccccc} & -2 & & 1 & \\ \hline 1-m & - & | & + & \\ 2+m & + & | & + & \\ \hline & - & | & + & \end{array} \Rightarrow \boxed{(-2,1)}$$

۱۰

$$\tan(300^\circ)\cos(210^\circ)+\tan(450^\circ)\sin(135^\circ)=؟$$

$$\begin{cases}\tan(360^\circ-60^\circ)\Rightarrow -\tan 60^\circ=-\sqrt{3} \\ \cos(180^\circ+30^\circ)\Rightarrow -\cos 30^\circ=-\frac{\sqrt{3}}{2} \\ \tan(360^\circ+90^\circ)\Rightarrow \tan 90^\circ=-\tan 60^\circ=-\sqrt{3} \\ \sin(360^\circ\times 2+90^\circ)\Rightarrow \sin 90^\circ=\sin 60^\circ=\frac{\sqrt{3}}{2}\end{cases}$$

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