کلاس یازدهم : A　　　پاسخنامه تکلیف شماره : ۲۶　　　نام و نام خانوادگی : علی ربانی

۱-

$S = ab\sin\alpha = \frac{1}{2} \times 2x \times 3x = 3x^2$

$3x^2 \longrightarrow 54$

$x^2 \longrightarrow 18 \Rightarrow x = +\sqrt{18}$

$P = 2 \times 5x = 10x = \boxed{10\sqrt{18}}$

۲-

$S_{ABC} = S_{ADE} + 1{,}75$

$\frac{1}{2} \times 7 \times 5 \times \sin A = \frac{1}{2} \times 7 \times 4 \times \sin A + 1{,}75$

$\frac{7}{2}\sin A(5-4) = 1{,}75$

$7\sin A = 3{,}5 \Rightarrow \sin A = 0{,}5 \Rightarrow \boxed{A = 30^\circ}$

$\tan 30^\circ = \frac{1}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}}$

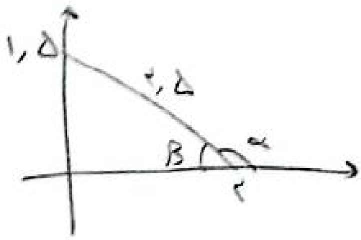
۳- ناحیه ۳

$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha} = -\frac{\sin\alpha}{\cos\alpha} \longrightarrow |\sin\alpha| = -\sin\alpha \Rightarrow \boxed{\sin\alpha < 0}$

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

$\Rightarrow \boxed{\cos\alpha < 0}$

۴-



$\sin\beta = \frac{1{,}5}{2{,}5} = \frac{3}{5}$

$\cos\beta = \frac{2}{2{,}5} = \frac{4}{5}$

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

$\beta + \alpha = 180 \Rightarrow \sin\alpha = \sin\beta \; , \; \cos\alpha = -\cos\beta$

۵-

$\frac{3\cos(248) - 2\sin(158)}{\sin(202) - \cos(292)} = \frac{3\cos(\underbrace{180}_{\pi}+68) - 2\sin(\underbrace{90}_{\frac{\pi}{2}}+68)}{\sin(\underbrace{180}_{\pi}+22) - \cos(\underbrace{270}_{\frac{3\pi}{2}}+22)} = \frac{-3\cos(68) - 2\cos(68)}{-2\sin(22)}$

$22 + 68 = 90 \Rightarrow \sin 22 = \cos 68 \Rightarrow \frac{-5\cancel{\cos(68)}}{-2\cancel{\cos(68)}} = \boxed{\frac{5}{2}}$

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-۶

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

$$\sin^2+\cos^2=1 \Rightarrow \frac{4}{9}+\sin^2=1 \Rightarrow \sin^2=\frac{5}{9} \Rightarrow \sin=\frac{\sqrt{5}}{\sqrt{9}} \xrightarrow{\text{ربع ۲}} -\frac{\sqrt{5}}{3}$$

$$\tan^2\alpha=\frac{\frac{5}{9}}{\frac{4}{9}}=\frac{5}{4}$$

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$$\sin^2\alpha+\cos^2\alpha=1$$

$$4\cos^2\alpha+\cos^2\alpha=1 \Rightarrow 5\cos^2\alpha=1 \Rightarrow \cos^2\alpha=\frac{1}{5} \Rightarrow \cos\alpha=\overset{\text{ربع دوم}}{-}\boxed{\frac{1}{\sqrt{5}}}$$

-۸

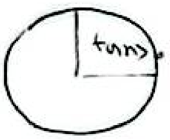
$$2mx+(m^2-1)y=2$$

$$\tan\alpha=\text{شیب} \Rightarrow \tan 60^\circ=\frac{-2m}{m^2-1} \Rightarrow \frac{-2m}{m^2-1}=\sqrt{3} \Rightarrow \sqrt{3}m^2-\sqrt{3}=-2m$$

$$\sqrt{3}m^2+2m-\sqrt{3}=0 \Longrightarrow \frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{4+4\times3}}{\sqrt{3}}=\boxed{\frac{4}{\sqrt{3}}}$$

-۹

$$-\frac{\pi}{4}<x<\frac{\pi}{4} \qquad \frac{\pi}{4}>-x>-\frac{\pi}{4} \qquad \frac{\pi}{2}>\frac{\pi}{4}-x>0$$



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

-۱۰

$$\tan(400^\circ)\cos(210^\circ)+\tan(\underset{\frac{-360}{120}}{480^\circ})\sin(\underset{\frac{-720}{120}}{840^\circ})$$

$$-\sqrt{3}\times-\frac{\sqrt{3}}{2}+-\sqrt{3}\times\frac{\sqrt{3}}{2}=\frac{3}{2}-\frac{3}{2}=0$$