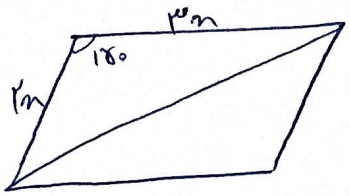
نام و نام خانوادگی ...ابوالفضل ابوفاضلی.... پاسخنامه تشریحی تکلیف شماره ...۲۶... کلاس ...یازدهم.....

۱



$S = 6\sqrt{3}$

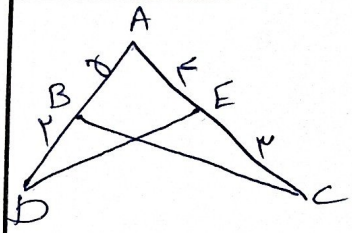
$P = ? \rightarrow P = 2(3m + 2m) = 10m$

$S = 2\left(\frac{1}{2}.(3m).(2m).\underbrace{\sin 120^\circ}_{\frac{\sqrt{3}}{2}}\right) = 3m^2 = 6\sqrt{3}$

$\rightarrow m = \sqrt{18} = 3\sqrt{2}$

$\Longrightarrow P = 10m = \boxed{30\sqrt{2}}$

۲



$S_{\triangle ADE} = \frac{1}{2}|\overline{AD}|.|\overline{AE}|.\sin\alpha = \frac{1}{2}\times 7\times 4\times \sin\alpha = 14\sin\alpha$

$S_{\triangle ABC} = \frac{1}{2}\times 5\times 7\times \sin\alpha = \frac{35}{2}\sin\alpha = 17{,}5\sin\alpha$

$\rightarrow$ اختلاف $= 3{,}5\sin\alpha = \frac{7}{4} \rightarrow \frac{7}{2}\sin\alpha = \frac{7}{4} \rightarrow$

$\sin\alpha = \frac{1}{2} \rightarrow \boxed{\alpha = 30^\circ}$ (حاده) $\rightarrow \tan 30^\circ = \frac{1}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}}$

۳

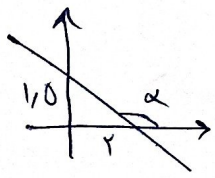
$\frac{|\sin\alpha|}{\cos\alpha} = \frac{-1}{\frac{\cos\alpha}{\sin\alpha}} \rightarrow |\sin\alpha| = -\sin\alpha \rightarrow \sin\alpha < 0$

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

$\Longleftrightarrow \cos\alpha < 0$

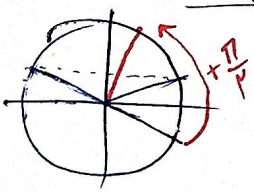
$\Longrightarrow$ [در ناحیه سوم]

۴



$\Longrightarrow \tan\alpha = \frac{-1{,}5}{2} = -\frac{3}{4}$

~~$\tan(-\alpha) = -\tan\alpha$~~ $\rightarrow \tan\left(\frac{\pi}{2} - \alpha\right) = \cot\alpha$



$\Longrightarrow \cot\alpha = \boxed{-\frac{4}{3}}$

۵

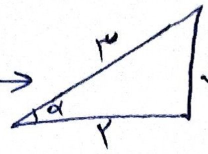
$$\frac{3\cos(240^\circ) - 2\sin(180^\circ)}{\sin(202^\circ) - \cos(292^\circ)} = \frac{3\cos(270^\circ - 30^\circ) - 2\sin(180^\circ + 22^\circ)}{\sin(180^\circ + 22^\circ) - \cos(270^\circ + 22^\circ)}$$

$$\underbrace{-\sin 22^\circ}\qquad\qquad \underbrace{\sin 22^\circ}$$

$$\rightarrow \frac{-3\sin 22^\circ - 2\sin 22^\circ}{-\sin 22^\circ - \sin 22^\circ} = \boxed{\frac{5}{2}}$$

۶

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

$\cos\alpha = \frac{2}{3} \longrightarrow$  $\xrightarrow{\text{ناحیه چهارم}} \begin{cases} \sin\alpha = -\frac{\sqrt{5}}{3} \\ \tan\alpha = -\frac{\sqrt{5}}{2} \rightarrow \tan^2\alpha = \frac{5}{4} \end{cases}$

۷

$\sin\alpha = 2\cos\alpha$

$\sin^2\alpha + \cos^2\alpha = 1 \longrightarrow (2\cos\alpha)^2 + \cos^2\alpha = 5\cos^2\alpha = 1 \rightarrow \cos^2\alpha = \frac{1}{5}$

$\longrightarrow \cos\alpha = \pm\frac{1}{\sqrt{5}} \xrightarrow{\text{ناحیه سوم}} \cos\alpha = -\frac{1}{\sqrt{5}} = -\frac{\sqrt{5}}{5}$

۸

$2mx + (m^2-1)y = 3 \longrightarrow \tan 60^\circ = \sqrt{3} \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3} \longrightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$

$\xrightarrow{\times\sqrt{3}} 3m^2 + 2\sqrt{3}m - 3 = 0 \longrightarrow m = \frac{-2\sqrt{3} \pm \sqrt{48}}{6}$

اختلاف $= \frac{|\sqrt{\Delta}|}{|a|} = \frac{\sqrt{48}}{3} = \frac{4\sqrt{3}}{3}$

۹

$0 < \frac{1-m}{2+m} < +\infty$

	-2		1	
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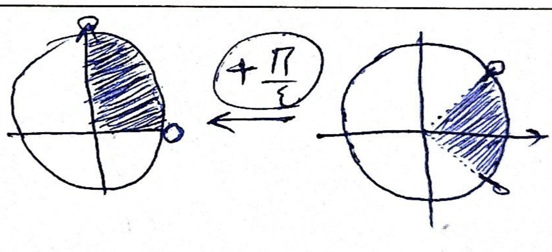
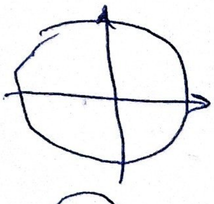
$\Longrightarrow m : (-2, 1)$



۱۰

$\tan(300^\circ)\cos(210^\circ) + \tan(480^\circ)\sin(840^\circ)$



$\tan(-60^\circ) = -\tan 60^\circ = -\sqrt{3}$

$\cos(210^\circ) = -\cos 30^\circ = -\frac{\sqrt{3}}{2}$

$\tan(480^\circ) = -\tan 60^\circ = -\sqrt{3}$

$\sin(840^\circ) = \sin 60^\circ = \frac{\sqrt{3}}{2}$

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