۶

$\cos\alpha = \frac{2}{3}$ ↓ (triangle: 3, 2, x) $x=\sqrt{5}$ $\Rightarrow \sin\alpha = \frac{-\sqrt{5}}{3}$, $\tan\alpha = \frac{-\sqrt{5}}{2}$

$\Rightarrow \dfrac{\sin(\frac{\pi}{2}+\alpha) - \sin(\alpha-\pi)}{|\tan^2\alpha - 1|} = ?$ ($\sin(\frac{\pi}{2}+\alpha) \to +\cos\alpha$, $\sin(\alpha-\pi) \to -\sin\alpha$)

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

$(\frac{5}{4} - 1 \to \frac{1}{4})$

۷

$\sin\alpha = 2\cos\alpha \to \cos\alpha = ?$ $\Rightarrow \sin^2\alpha + \cos^2\alpha = 1$ ($\sin^2\alpha = 4\cos^2\alpha$)

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

۸

$2mx + (m^2-1)y = 3 \to \tan 60^\circ = \sqrt{3} \to |m_2 - m_1| = ?$

$\to y = \frac{-2m}{m^2-1}x + \frac{3}{m^2-1} \Rightarrow \sqrt{3} = \frac{-2m}{m^2-1} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0 \xrightarrow{\Delta = b^2-4ac} \Delta = (2)^2 - (\sqrt{3})(-\sqrt{3}) = 16$

$\Rightarrow m = \frac{-2\pm 4}{2\sqrt{3}} \to m = \frac{1}{\sqrt{3}}, \frac{-3}{\sqrt{3}} \Rightarrow m_1 - m_2 = \frac{1}{\sqrt{3}} - (-\frac{3}{\sqrt{3}}) = \frac{4}{\sqrt{3}}$

۹

$\tan(\frac{\pi}{4} - x) = \frac{1-m}{2+m}$ ($\tan(\frac{\pi}{4}-x)$ ↳ $\tan x$), $\frac{-\pi}{4} < x < \frac{\pi}{4} \to -1 < \tan x < 1$

$\Rightarrow -1 < \frac{1-m}{2+m} < 1$

$\frac{1-m}{2+m} - 1 < 0 \to \frac{-1-2m}{2+m} < 0$: (-2, $-\frac{1}{2}$: $-$ $+$ $-$)

$\frac{1-m}{2+m} + 1 > 0 \to \frac{3}{2+m} > 0$: (-2: $-$ $+$)

$\overset{\cap}{\Rightarrow} m > -\frac{1}{2}$

۱۰

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

$300 = 360 - 60$ ↳ $-\tan 60^\circ$; $210 = 180 + 30$ ↳ $-\cos 30$; $480 = 360 + 120$ ↳ $-\tan 120$, $90 + 30$ ↳ $-\cot 30^\circ$; $840 = 720 + 120$ ↳ $\sin 120$, $90 + 30$ ↳ $\cos 30^\circ$

$\Rightarrow +\tan 60 \times \cos 30 - \cot 30 \times \cos 30 = \sqrt{3}\times\frac{\sqrt{3}}{2} - \sqrt{3}\times\frac{\sqrt{3}}{2} = 0$

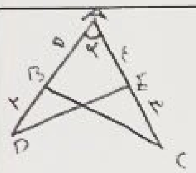
نام و نام خانوادگی ......هستی حاجی‌زاده...... **پاسخنامه تشریحی تکلیف شماره** ..۲۰.. **کلاس** ..یازدهم دهم A..........

①

$\sin 150^\circ \times 2x \times 3x = 18 \rightarrow x^2 = 18 \rightarrow x = 3\sqrt{2}$ ($\sin 150^\circ = \frac{1}{2}$)

$\Rightarrow 2\times(3x+2x) = 10x = 30\sqrt{2}$:محیط

②



$|S_{ABC} - S_{ADE}| = \frac{7}{2} \Rightarrow \frac{1}{2}AB\times AC\times\sin\alpha - \frac{1}{2}AE\times AD\times\sin\alpha = \frac{7}{2}$

$\Rightarrow \sin\alpha\times(\underbrace{5\times7}_{35} - \underbrace{4\times7}_{28}) = \frac{7}{2} \rightarrow \sin\alpha = \frac{1}{2} \xrightarrow{\text{حاده}} \alpha = 30^\circ$

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

③

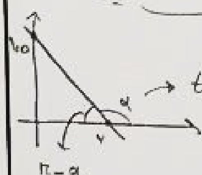
$\frac{1}{\sqrt{\cos^2\alpha}} - \tan\alpha = \frac{1-\sin\alpha}{|\cos\alpha|} \rightarrow \frac{1-s}{|\cos\alpha|}$; $\sqrt{\cos^2\alpha} = |\cos\alpha|$

$\cos\alpha < 0 \rightarrow |\cos\alpha| = -\cos\alpha$ (ناحیه ۲ یا ۳)

$\frac{|\sin\alpha|}{\cos\alpha} = \frac{-1}{\cot\alpha} = \frac{-\sin\alpha}{\cos\alpha} \rightarrow \sin\alpha < 0 \rightarrow$ ناحیه ۳ و ۴ $\Rightarrow$ α در ناحیه سوم است!

④

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



$\rightarrow \tan(\pi - \alpha) = -\tan\alpha = +\frac{3}{4} \rightarrow \tan\alpha = \frac{-3}{4} \rightarrow \cot\alpha = \frac{-4}{3}$

⑤

$\frac{3\cos(248) - 2\sin(158)}{\sin(202) - \cos(292)} = ?$; $(270-22)$, $(180-22)$, $(180+22)$, $(270+22)$

$\Rightarrow \frac{3\times -\sin 22 - 2\times\sin 22}{-\sin 22 - \sin 22} = \frac{-5\sin 22}{-2\sin 22} = \frac{5}{2} = 2/5$