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نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۶ کلاس A

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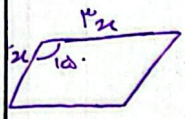

$S_{\square} = ab\sin\alpha = 4x^2 \sin 150^\circ = 24 \rightarrow x^2 = 18 \rightarrow x = 3\sqrt{2}$

$P_{\square} = 10x = 30\sqrt{2}$

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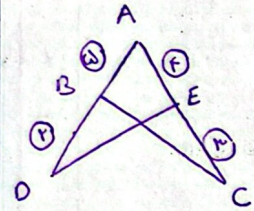

$S_{ABC} - S_{ADE} = 17/5$

$S_{ABC} = \frac{1}{2} \times 5 \times 7 \times \sin A = 17/5 \sin A$

$S_{ADE} = \frac{1}{2} \times 4 \times 7 \times \sin A = 14 \sin A$

$\Rightarrow 17/5 \sin A - 14 \sin A = 3/5 \sin A = 1/75 \Rightarrow \sin A = \frac{1}{2} \xrightarrow{A = 30^\circ} \tan 30^\circ = \frac{1}{\sqrt{3}}$

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$\frac{1}{\sqrt{\cos^2 a}} - \tan a = \frac{1+\sin a}{|\cos a|} \Rightarrow \frac{1}{|\cos a|} - \tan a = \frac{1+\sin a}{|\cos a|}$

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

$\cos a < 0$

$\frac{|\sin a|}{\cos a} = -\frac{1}{\cot a}$

$\frac{|\sin a|}{\cos a} = -\frac{\sin a}{\cos a} \Rightarrow |\sin a| = -\sin a \Rightarrow \sin a < 0 \Rightarrow$ ناحیه سوم

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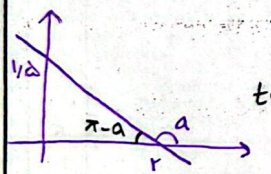

$\tan(\pi - a) = \frac{1/5}{2} \Rightarrow \tan a = -\frac{3}{4}$

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

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$\frac{3\cos(245^\circ) - 2\sin(145^\circ)}{\sin(152^\circ) - \cos(248^\circ)} = \frac{3\cos(270^\circ - 22^\circ) - 2\sin(180^\circ - 22^\circ)}{\sin(180^\circ + 22^\circ) - \cos(270^\circ + 22^\circ)}$

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

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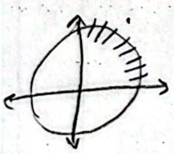
$\cos a = \frac{2}{3}$ $\frac{\sin(\frac{\pi}{2}+a) - \sin(a-\pi)}{\lvert\tan^2 a - 1\rvert} \xrightarrow{\text{IF …}} \frac{\cos a + \sin(\pi - a)}{\lvert\tan^2 a - 1\rvert}$ ($\sin(\pi - a) = \sin a$) IF … a, $\cos a = \frac{2}{3}$ (triangle: 3, 2, $\sqrt{5}$) $\Rightarrow \sin a = -\frac{\sqrt{5}}{3}$, $\tan a = -\frac{\sqrt{5}}{2}$ $\Rightarrow \frac{\frac{2}{3} + (-\frac{\sqrt{5}}{3})}{\lvert\frac{5}{4} - 1\rvert} = \frac{\frac{2-\sqrt{5}}{3}}{\frac{1}{4}} = \frac{4(2-\sqrt{5})}{3}$	6
$\sin a = 2\cos a \xrightarrow{\div \cos a} \tan a = 2$ $\hookrightarrow \frac{1}{\cos^2 a} = 1 + \tan^2 a \Rightarrow \frac{1}{\cos^2 a} = 5 \Rightarrow \cos a = \pm\frac{\sqrt{5}}{5} \xrightarrow{\text{ربع سوم}} -\frac{\sqrt{5}}{5}$	7
$2mx + (m^2-1)y = 3 \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$ $\rightarrow \tan 60^\circ = \sqrt{3}$ $\lvert m_1 - m_2\rvert = \frac{\sqrt{\Delta}}{\lvert a\rvert} = \frac{\sqrt{16}}{\sqrt{3}} = \frac{4}{\sqrt{3}}$	8
$-\frac{\pi}{4} < x < \frac{\pi}{4}$ $\tan(\frac{\pi}{4} - x) = \frac{1-m}{2+m} \Rightarrow 0 < \frac{\pi}{4} - x < \frac{\pi}{2} \Rightarrow 0 < \tan(\frac{\pi}{4} - x) \Rightarrow 0 < \frac{1-m}{2+m}$  $\Rightarrow$ (sign table: -2, 1: $-$ $+$ $-$) $\rightarrow \boxed{-2 < m < 1}$	9
$\tan(300^\circ)\cos(210^\circ) + \tan(480^\circ)\sin(840^\circ) =$ $300^\circ \to \frac{5\pi}{3}$, $210^\circ \to \frac{7\pi}{6}$; $\tan(120^\circ)\sin(120^\circ)$; $120^\circ \to \frac{2\pi}{3}$, $120^\circ \to \frac{2\pi}{3}$ $= (-\sqrt{3})(-\frac{\sqrt{3}}{2}) + (-\sqrt{3})(\frac{\sqrt{3}}{2})$ $\frac{3}{2} - \frac{3}{2} = 0$	10