نام و نام خانوادگی: ... نام مدرسه: ...

B تالیف شما در کلاس باز دهم پیش

۲۰

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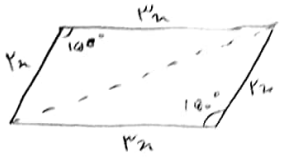


(۲) $S_{\square} = 2 \times \frac{1}{2} \times \sin 150 \times 2\sqrt{2} \times 3\sqrt{2} = 6$

$\Rightarrow \frac{1}{2} \times 2x^2 = 6 \Rightarrow 3x^2 = 6 \Rightarrow x^2 = 18 \Rightarrow x = 3\sqrt{2}$

$P = 2x + 3\sqrt{2} + 2x + 3\sqrt{2} = 10x = 30\sqrt{2}$ ✓

۲- (۲) $S_{ABC} = \frac{1}{2} \times 5 \times 7 \times \sin A = 17.5 \sin \hat{A}$ $S_{ADE} = \frac{1}{2} \times 4 \times 7 \times \sin A = 14 \sin \hat{A}$

نوشت مساحت ... است: 17.5

$S_{ABC} - S_{ADE} = 17.5 \Rightarrow 3.5 \sin A = 17.5 \Rightarrow \sin A = \frac{1}{2}$

$\Rightarrow \hat{A} = 30^\circ$ $\tan 30^\circ = \tan A = \frac{1}{\sqrt{3}}$ ✓

۳- (۲) $\frac{1}{\sqrt{\cos^2 \alpha}} - \tan \alpha = \frac{1+\sin \alpha}{|\cos \alpha|} \Rightarrow \frac{1}{|\cos \alpha|} - \tan \alpha = \frac{1+\sin \alpha}{|\cos \alpha|} \Rightarrow \frac{1}{|\cos \alpha|} - \tan \alpha = \frac{1}{|\cos \alpha|} + \frac{\sin \alpha}{|\cos \alpha|}$

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

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

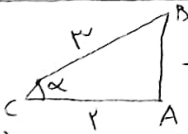
نوع دوم ✓

۴- (۲) $\tan(\pi - \alpha) = \frac{3}{2} = \frac{3}{4}$ $\tan\left(\frac{\pi}{2} - \alpha\right) = \cot \alpha$ $\tan(\pi - \alpha) = -\tan \alpha$

$-\tan \alpha = \frac{3}{4} \Rightarrow \tan \alpha = -\frac{3}{4} \Rightarrow \cot \alpha = \frac{-4}{3}$ ✓

۵- (۲) $\frac{3\cos(248) - 2\sin(151)}{\sin(202) - \cos(292)} = \frac{3\cos(270-22) - 2\sin(180-22)}{\sin(180+22) - \cos(270+22)} = \frac{-3\sin 22 - 2\sin 22}{-\sin 22 - \sin 22} = \frac{-5\sin 22}{-2\sin 22} = \frac{5}{2}$ ✓

۶- (۲) $\frac{\pi}{2} < \alpha < 2\pi$ $\cos \alpha = \frac{2}{3}$



نسبت فیثاغورس $\Rightarrow AB = \sqrt{5} \Rightarrow \begin{cases} \sin \alpha = -\frac{\sqrt{5}}{3} \\ \tan \alpha = -\frac{\sqrt{5}}{2} \end{cases}$

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

۷- (۲) $\sin \alpha = 2\cos \alpha \xrightarrow{\div \cos \alpha} \tan \alpha = 2$

$\frac{1}{\cos^2 \alpha} = 1 + \tan^2 \alpha \Rightarrow \frac{1}{\cos^2 \alpha} = 5 \Rightarrow \cos \alpha = \pm \frac{\sqrt{5}}{5}$ جواب سوم $\Rightarrow \cos \alpha = -\frac{\sqrt{5}}{5}$ ✓

۸- (۲) $2mx + (m^2 - 1)y = 3$ $\tan 60^\circ = \sqrt{3}$

$\Rightarrow \frac{-2m}{m^2 - 1} = \sqrt{3} \Rightarrow \sqrt{3} m^2 + 2m - \sqrt{3} = 0 \Rightarrow |m_1 - m_2| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{16}}{\sqrt{3}} = \frac{4}{\sqrt{3}}$ ✓

۹- (۲) $-\frac{\pi}{4} < x < \frac{\pi}{4}$ $\tan\left(\frac{\pi}{4} - x\right) = \frac{1-m}{2+m}$ $-\frac{\pi}{4} < x < \frac{\pi}{4} \Rightarrow -\frac{\pi}{4} < x < \frac{\pi}{4} \Rightarrow 0 < \frac{\pi}{2} - x < \frac{\pi}{2}$

$\Rightarrow 0 < \tan\left(\frac{\pi}{4} - x\right) \Rightarrow 0 < \frac{1-m}{2+m} \Rightarrow \frac{-2 \quad 1}{-\ \ +\ \ -} \Rightarrow -2 < m < 1$ ✓

۱۰ (۲) $\tan\underbrace{(360)}_{360-0} \cos\underbrace{(210)}_{180+30} + \tan\underbrace{(450)}_{2\times180-90} \sin\underbrace{(810)}_{3\times180-90} = -\tan 60 \times (-\cos 30) + (-\tan 60 \times \sin 60)$

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