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

19,5

۱ — $S = \frac{1}{2}ab\sin\alpha \Rightarrow 9a^2 \times \frac{1}{2} \Rightarrow 3a^2 = 24 \Rightarrow a^2 = 18 \Rightarrow a = 3\sqrt{2}$

$\Rightarrow P = 2(3a+3a) = 12a \Rightarrow 12(3\sqrt{2}) = 36\sqrt{2}$ ✓ (۲)

۲ — $\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1+\sin\alpha}{|\cos\alpha|} \Rightarrow$ پس باید $\cos\alpha < 0$ باشد تا جواب دهد

$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha} \Rightarrow$ $\cos\alpha$ منفی است پس سینوس کمان هم باید منفی باشد تا معادله جواب دهد

$\Rightarrow$ پس در ناحیه سوم مثلثاتی قرار دارد ✓ (۱,۵)

(این سؤال برای سؤال ۳ هم باشد)

۳ — $S_{ABC} \Rightarrow \frac{1}{2}\times 12\times 5\sin A$ — $S_{ADE} \Rightarrow \frac{1}{2}\times 4\times 5\sin A$

$\Rightarrow \frac{1}{2}\times 12\times 5\sin A - \frac{1}{2}\times 4\times 5\sin A = 11\times 5$ (در واقع این سؤال ۲ هم باشد)

$\Rightarrow 5\sin A = 110 \Rightarrow \sin A = \frac{22}{10} = \frac{11}{5}$ ✗

$\Rightarrow \frac{1}{2}\sin A = \frac{11}{10} \Rightarrow \sin A = \frac{22}{10} = \frac{11}{5}$ ✗

$\Rightarrow \frac{1}{\frac{\sqrt{10}}{4}} \Rightarrow \frac{4}{\sqrt{10}} \Rightarrow \frac{1}{\sqrt{10}} \Rightarrow \frac{\sqrt{10}}{10}$

$\sin A = \frac{1}{2} \Rightarrow A = 30^\circ \rightarrow \tan A = \frac{\sqrt{3}}{3}$

$\sin\alpha = \frac{4}{5} \Rightarrow \alpha = \sqrt{10} \Rightarrow \tan\alpha = \frac{\sin\alpha}{\cos\alpha}$ (۲)

دقت! $S_\Delta = \frac{1}{2}ab\sin\alpha$

۴ — $\tan(\frac{\pi}{2}-\alpha) = \cot\alpha$

$\Rightarrow \tan(\pi-\alpha) = \frac{11}{2} \times \frac{3}{4}$

$\Rightarrow \tan(\alpha) = -\frac{3}{4} \Rightarrow \cot\alpha = -\frac{4}{3}$ ✓ (۲)

۵ — $\frac{3\cos(\frac{3\pi}{2}-2\beta) - 2\sin(\pi-2\beta)}{\sin(\pi+2\beta) - \cos(\frac{3\pi}{2}+2\beta)} \Rightarrow \frac{-3\sin(2\beta) - 2\sin(2\beta)}{-\sin(2\beta) - \sin(2\beta)} = \frac{-5}{-2} = 2/5$ ✓ (۲)

$\sin\alpha = -\sqrt{1-\frac{\varepsilon}{9}} \Rightarrow -\frac{\sqrt{\omega}}{3}$ $\quad \tan^2\alpha = \frac{\sin^2\alpha}{\cos^2\alpha} \Rightarrow \frac{\frac{\omega}{9}}{\frac{\varepsilon}{9}} = \frac{\omega}{\varepsilon}$ (۲)

۶

$\Rightarrow \frac{\sin(\alpha+\frac{\pi}{4}) - \sin(\alpha-\pi)}{|\tan^2\alpha - 1|} \Rightarrow \frac{\cos\alpha + \sin\alpha}{\frac{\omega}{\varepsilon} - 1}$

$\Rightarrow \frac{\frac{2-\sqrt{\omega}}{3}}{\frac{1}{\varepsilon}} \Rightarrow \frac{\varepsilon}{3}(2-\sqrt{\omega})$ ✓

$\sin\alpha = 2\cos\alpha \Rightarrow \sin^2\alpha + \cos^2\alpha = 1 \Rightarrow 4\cos^2\alpha + \cos^2\alpha = 1$ (۲)

۷

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

ج سوم

$\tan\alpha = -\frac{a}{b} \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3} \Rightarrow \sqrt{3}m^2 - \sqrt{3} = -2m \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$ (۲)

۸

$\Rightarrow \frac{\sqrt{3}}{3}(\sqrt{3}m+3)(\sqrt{3}m-1) \Rightarrow \sqrt{3}m+3=0 \Rightarrow \sqrt{3}m = -3 \Rightarrow m = -\frac{3}{\sqrt{3}}$

$\Rightarrow \sqrt{3}m - 1 = 0 \Rightarrow \sqrt{3}m = 1 \Rightarrow m = \frac{1}{\sqrt{3}}$

$\Rightarrow |m_1 - m_2| = \frac{\varepsilon}{\sqrt{3}}$ ✓

$-\frac{\pi}{4} < \alpha < \frac{\pi}{4} \Rightarrow -\frac{\pi}{4} < -\alpha < \frac{\pi}{4} \Rightarrow 0 < \frac{\pi}{4} - \alpha < \frac{\pi}{2}$ (۲)

۹

$\Rightarrow \tan(\frac{\pi}{4} - \alpha) > 0 \Rightarrow \frac{1-m}{2+m} > 0 \Rightarrow$ $\begin{array}{c|ccc} & -2 & & 1 \\ \hline - & 0 & + & 0 & - \end{array}$

$\Rightarrow -2 < m < 1$ ✓

$\tan(160)\cos(110) + \tan(80)\sin(170) \Rightarrow \tan(90-\theta)\cos(180+\theta) + \tan(90+\theta)\sin(360-\theta)$ (۲)

۱۰

$\Rightarrow (-\tan\theta)(-\cos\theta) + (-\tan\theta)\sin\theta \Rightarrow$

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