نام و نام خانوادگی .....امیرحسین حاجی..... پاسخنامه تشریحی تکلیف شماره ۱۸... کلاس ....۱۰A.....

۱

الف) $\frac{11\pi}{4} \to 135^\circ \quad \frac{10\pi}{4} \Rightarrow 315^\circ \quad \frac{13\pi}{4} \Rightarrow 225$

$\tan 135 + \sin^2 315 \cdot \cos 225 = -1 + \left(-\frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2}\right) = -1 + \frac{2}{4} = -\frac{1}{2}$

ب) $\frac{17\pi}{2} \Rightarrow 1530^\circ \quad \frac{11\pi}{3} \Rightarrow 660^\circ \quad \cos\frac{10\pi}{3} \Rightarrow 240^\circ$

$\tan 1530^\circ \times \sin 660^\circ + \cos 240^\circ = \left(-\frac{\sqrt{3}}{3} \times -\frac{\sqrt{3}}{2}\right) - \frac{1}{2} = \frac{1}{2} - \frac{1}{2} = 0$

۲

$\cot = 4 \Rightarrow \frac{\cos}{\sin} = \frac{4}{1} \qquad \frac{3\times(4) - 1}{4 + 1} = \frac{11}{5}$

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$\sin^2 + \cos^2 = 1 \to 4\cos^2 + \cos^2 = 1 \qquad \cos^2 = \frac{1}{5} \qquad \sqrt{\cos^2} = \pm\frac{1}{\sqrt{5}}$

$\Leftrightarrow (2\cos)^2$

ناحیه سوم cos منفی است پس جواب $-\frac{1}{\sqrt{5}}$ است.

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الف) $\frac{11\pi}{4} + \alpha \Rightarrow 2\pi + \frac{3\pi}{4} + \alpha \qquad \cos\left(\frac{3\pi}{4} + \alpha\right) = \pm\sin\alpha$

$\sin\alpha = \frac{\sqrt{2}}{10} \to$ ناحیه ۲ $\sin$ مثبت $\qquad \cos\left(\frac{11\pi}{4} + \alpha\right) = +\frac{\sqrt{2}}{10}$

$\tan\alpha + 1 = \frac{1}{\cos^2\alpha} \qquad 1 + \frac{1}{14} = \frac{1}{\cos^2} \qquad \cos = \frac{7}{\sqrt{50}} = \frac{7\sqrt{2}}{10}$

ب) $\sin\alpha = \frac{\sqrt{2}}{10}$

$\sin\left(\frac{5\pi}{4} + \alpha\right) = \left(-\frac{\sqrt{2}}{2}\right)\cos\alpha + \left(-\frac{\sqrt{2}}{2}\right)\sin\alpha = -\frac{\sqrt{2}}{2}(\sin\alpha + \cos\alpha) = -\frac{4}{5}$

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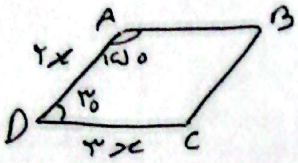
$2\sin^2 x + \cos^2 x = \frac{5}{3} \qquad \sin^2 x + \cos^2 x = 1$

$\sin^2 = \frac{1}{3} \qquad \cos^2 = \frac{2}{3}$

$\tan^2 = \frac{\sin^2}{\cos^2} \Rightarrow \frac{\frac{1}{3}}{\frac{2}{3}} = \frac{1}{2}$

<< سوال ۶ و ۷ را جا به جا نوشتم >>

S متوازی الاضلاع : $\frac{1}{2} \times 2 \times \sin \alpha \times AD \times DC \times 2$



$\frac{1}{2} \times \frac{1}{2} \times 4 \times 3x \times 2x = 54$ ۷

$3x^2 = 54$

$x^2 = 18$ $\quad x = 3\sqrt{2}$

محیط $= 2 \times 2x + 2 \times 3x = 3\sqrt{2} \times 2 \times 2 + 3\sqrt{2} \times 2 \times 3$

$= 30\sqrt{2}$

$S = \frac{1}{2} \times \sqrt{3} \times 6 \times \sin \alpha = 4,5$ ۶

$3\sqrt{3} \sin \alpha = 4,5 \Rightarrow \sin \alpha = \frac{3}{2\sqrt{3}}$

$\frac{\sqrt{3}}{2}$ < max $= 60°$, min $= 120°$

$\frac{120}{60} = 2$

$S_{ABC} - S_{ADE} = 1,75$ $\quad \frac{1}{2} \sin_A \times AB . AC - \frac{1}{2} \sin A \times AD . AE$ ۸

$\frac{1}{2} \times \sin_A \times 5 \times 7 = \frac{35}{2} \sin_A$ $\quad / \frac{1}{2} \times \sin_A \times 7 \times 4 = 14 \sin A$

$\frac{35}{2} - \frac{28}{2} \sin_A = \frac{7}{2} \sin_A = 1,75$ $\quad \sin A = \frac{1,75}{\frac{7}{2}} = \frac{1}{2}$

$A = 30°$ ($\tan 30 = \frac{1}{\sqrt{3}}$)

$\frac{\frac{1}{2} \sin B \times AB . CB}{\frac{1}{2} . \sin B . BM . BN} = 3$ $\quad \frac{AB \times 5NC}{BM \times 3NC} = 3$ ۹

$\frac{BM}{AM} = \frac{BM}{0,8 BM} \Rightarrow \frac{8}{10} = \frac{5}{4}$

$-\frac{1}{\cot \alpha} = -\tan \alpha$ $\quad -\frac{\tan \alpha}{1} = \frac{|\sin \alpha|}{\cos \alpha}$ $\rightarrow$ cos + , sin − ۱۰

$\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|}$ $\quad$ ناحیه ④

مخرج مشترک گرفته شده $|\cos|$

$\cos$: $+$ ⇐

$\sin$: $-$ ⇐