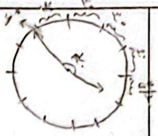


نام و نام خانوادگی پاسخنمه تشریحی تکلیف شماره ۱۶، کلاس دهم
 نام و نام خانوادگی پاسخنمه تشریحی تکلیف شماره ۱۶، کلاس دهم

الف) $\alpha = 2 \times 30^\circ + 4^\circ + \frac{54}{4} = 153^\circ$
 $320 \div 12 = 26^\circ \text{ باقیمانده } 8$ / $30 \div 5 = 6^\circ \rightarrow$ زاویه ساعت شمار $\frac{54}{4} = 13.5$

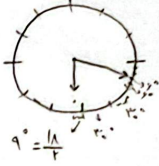
ب) $\alpha = |5.5 \times 54 - 30 \times 4| = |297 - 120| = 177^\circ \rightarrow 180^\circ - 177^\circ = 3^\circ$



$36 \div 12 = 3^\circ$ / $30 \div 5 = 6^\circ$

الف) $\alpha = 4 + 4 + 30 + 9 = 47^\circ$

ب) $\alpha = |5.5 \times 18 - 3 \times 4| = |99 - 12| = 87^\circ$



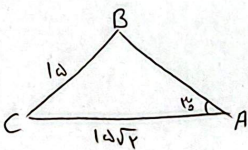
الف) $S = \alpha R = 3 \times \frac{\pi}{180} = \frac{\pi}{60}$

ب) $|AB| = 2R = 2 \times 3 = 6 \rightarrow \frac{6}{2} = 3 = 4 + 3 + 3 = 10$

الف) $S = \sin A \times \frac{1}{4} \times AC \times AB = \frac{\sqrt{3}}{4} \times \frac{1}{4} \times 4 \times 5 = 5\sqrt{3}$

ب) $CB = \sqrt{4^2 + 5^2 - 2 \times 4 \times 5 \times \frac{1}{4}} = \sqrt{41} = 7$

ج) $\frac{6}{2} = 3 = 4 + 5 + 7 = 16$



$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \rightarrow \frac{15}{\sin A} = \frac{15\sqrt{2}}{\sin B} \rightarrow \frac{15\sqrt{2}}{15 \times 2} = \sin B$

$\hat{B} + \hat{C} = 150^\circ \rightarrow \hat{C} = 150^\circ - 45^\circ = 105^\circ$ $\sin B = \frac{\sqrt{2}}{2} \rightarrow B = 45^\circ$

$\hat{B} = \frac{\pi}{4}$, $\hat{C} = \frac{105 \times \pi}{180} = \frac{7\pi}{12}$

مساحت B

$\tan(\pi - \alpha) = \frac{\tan \pi - \tan \alpha}{1 + \tan \pi \cdot \tan \alpha} = \frac{-\tan \alpha}{1} = -\tan \alpha$ $\tan(\pi + \alpha) = \frac{\tan \pi + \tan \alpha}{1 - \tan \pi \cdot \tan \alpha} = \frac{\tan \alpha}{1} = \tan \alpha$ $\tan(\pi - \alpha) = \frac{\tan \pi - \tan \alpha}{1 + \tan \pi \cdot \tan \alpha} = \frac{-\tan \alpha}{1} = -\tan \alpha$ $\tan(\pi + \alpha) = \frac{\tan \pi + \tan \alpha}{1 - \tan \pi \cdot \tan \alpha} = \frac{\tan \alpha}{1} = \tan \alpha$	$\pi = 180^\circ, \quad \pi = 180^\circ$ $\tan 180^\circ = \frac{0}{-1} = 0, \quad \tan 180^\circ = \frac{0}{-1} = 0$ $\frac{-\tan \alpha + \tan \alpha}{-\tan \alpha - \tan \alpha} = \frac{\tan \alpha}{-\tan \alpha} = -1$	8
$A = \frac{\tan(90^\circ - 15^\circ) + \tan(90^\circ + 15^\circ)}{\tan(180^\circ - 15^\circ) - \tan(180^\circ + 15^\circ)}$ $\tan(90^\circ - 15^\circ) = \cot 15^\circ$ $\tan(90^\circ + 15^\circ) = -\cot 15^\circ$ $\tan(180^\circ - 15^\circ) = -\tan 15^\circ$ $\tan(180^\circ + 15^\circ) = \tan 15^\circ$	$\tan 15^\circ = a, \quad \cot 15^\circ = \frac{1}{a}$ $\frac{\cot 15^\circ - \cot 15^\circ}{-\tan 15^\circ - \tan 15^\circ} = \frac{\frac{1}{a}}{-2a} = -\frac{1}{2a^2}$	7
$\frac{\sin \alpha + \cos \alpha}{\sin \alpha - \cos \alpha} + \frac{\sin \alpha - \cos \alpha}{\sin \alpha + \cos \alpha} = \frac{(\sin \alpha + \cos \alpha)^2 + (\sin \alpha - \cos \alpha)^2}{\sin^2 \alpha - \cos^2 \alpha}$ $= \frac{2}{\sin^2 \alpha - \cos^2 \alpha} = \frac{2}{1} \rightarrow \sin^2 \alpha - \cos^2 \alpha = \frac{2}{1} \rightarrow \sin^2 \alpha - 1 + \sin^2 \alpha = \frac{2}{1} \rightarrow 2\sin^2 \alpha - 1 = \frac{2}{1}$ $\rightarrow \sin^2 \alpha = \frac{3}{2} \rightarrow \sin \alpha = \sqrt{\frac{3}{2}} = \frac{\sqrt{6}}{2}$	$\frac{2}{\sin^2 \alpha - \cos^2 \alpha} = \frac{2}{1} \rightarrow \sin^2 \alpha - \cos^2 \alpha = 1$ $\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\frac{\sqrt{6}}{2}}{\frac{1}{2}} = \sqrt{6}$	1
$\frac{1 - \cos \alpha}{\sin \alpha} = \frac{1 - \cos \alpha}{\sin \alpha} \rightarrow \frac{1 - \cos \alpha}{1 - \cos \alpha} = \frac{1 - \cos \alpha}{\sin \alpha} \rightarrow \frac{1 - \cos \alpha}{\sin \alpha} = \frac{1 - \cos \alpha}{\sin \alpha}$ $\sin \alpha = 1 - \cos \alpha = 1 - \frac{1}{2} = \frac{1}{2}$ $\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\frac{1}{2}}{\frac{1}{2}} = 1$	$\frac{1 - \cos \alpha}{\sin \alpha} = \frac{1 - \cos \alpha}{\sin \alpha} \rightarrow \frac{1 - \cos \alpha}{\sin \alpha} = \frac{1 - \cos \alpha}{\sin \alpha}$ $\sin \alpha = 1 - \cos \alpha = 1 - \frac{1}{2} = \frac{1}{2}$ $\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\frac{1}{2}}{\frac{1}{2}} = 1$	9
$a) \cos(45^\circ) \Rightarrow \cos(45^\circ) = \frac{1 + \cos 90^\circ}{2} = \frac{1 + 0}{2} = \frac{1}{2}$ $\cos(45^\circ) = \frac{\sqrt{2}}{2}$	$\cos(45^\circ) = \frac{1 + \cos 90^\circ}{2} = \frac{1 + 0}{2} = \frac{1}{2}$ $\cos(45^\circ) = \frac{\sqrt{2}}{2}$	10
$b) \sin(45^\circ) \Rightarrow \sin(45^\circ) = \frac{1 - \cos 90^\circ}{2} = \frac{1 - 0}{2} = \frac{1}{2}$ $\sin(45^\circ) = \frac{\sqrt{2}}{2}$	$\sin(45^\circ) = \frac{1 - \cos 90^\circ}{2} = \frac{1 - 0}{2} = \frac{1}{2}$ $\sin(45^\circ) = \frac{\sqrt{2}}{2}$	10