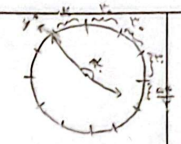


نام و نام خانوادگی پاسخنمه تشریحی تکلیف شماره کلاس
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الف) $\alpha = 2 \times 30^\circ + 1^\circ + \frac{54}{7} = 153^\circ$
 $320 \div 12 = 26^\circ \text{ باقیمانده } 8$ / $30 \div 5 = 6^\circ \rightarrow$ از این مقدار $\frac{54}{7} = 7^\circ$

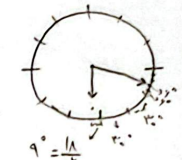
ب) $\alpha = |5,5 \times 54 - 30 \times 3| = |297 - 90| = 207^\circ \rightarrow 360^\circ - 207^\circ = 153^\circ$



$360 \div 12 = 30^\circ$ / $30 \div 5 = 6^\circ$

الف) $\alpha = 7 + 7 + 30 + 30 + 9 = 111^\circ$

ب) $\alpha = |5,5 \times 18 - 3 \times 4| = |99 - 12| = 87^\circ$



الف) $S = \frac{\alpha R^2}{2} = \frac{3 \times \pi}{2} = \frac{3\pi}{2}$

ب) $|AB| = 2R = 2 \times 3 = 6 \rightarrow \frac{6}{2} = 3 = 7 + 3 + 3 = 13$

الف) $S = \sin A \times \frac{1}{2} \times AC \times AB = \frac{\sqrt{3}}{2} \times \frac{1}{2} \times 1 \times 5 = 1,083$

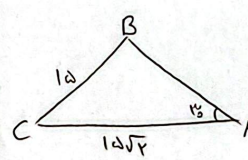
ب) $CB = \sqrt{7^2 + 5^2 - 2 \times 7 \times 5 \times \frac{1}{2}} = \sqrt{49} = 7$

ج) $\frac{6}{2} = 3 = 7 + 5 + 7 = 19$

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

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

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



مقدار B

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