نام و نام خانوادگی ..محمدرضا [illegible].. **پاسخنامه تشریحی تکلیف شماره** ..۱۹.. **کلاس** ..دهم B..

۲۵

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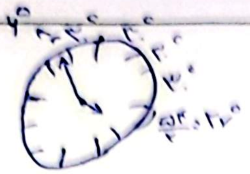
۳:۵۲



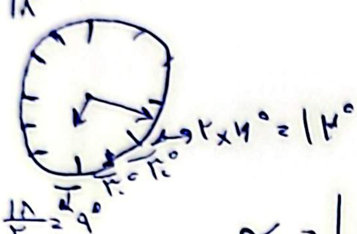
الف) $(4\times 30^\circ)+27+6=\boxed{153}$ ✓ ۲

ب) $\alpha=|5.5m-30h|=|(5.5\times 52)-(30\times 3)|=207$

زاویه کوچکتر: $360-207=\boxed{153}$ ✓

۲

۶:۱۸

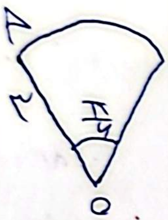


الف) $12^\circ+30^\circ+30^\circ+9^\circ=\boxed{81}$ ✓ ۲

ب) $\alpha=|5.5m-30h|=|(5.5\times 18)-(30\times 6)|=\boxed{81}$ ✓

($5.5\times18=99$، $30\times6=180$)

۳

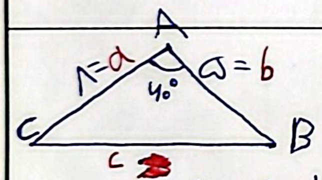


$S=\frac{1}{2}\alpha R^2 \Rightarrow \frac{\frac{\pi}{6}}{\frac{2}{1}}\times 9=\frac{\pi}{12}\times 9=\frac{9\pi}{12}=\boxed{\frac{3\pi}{4}}$ مساحت قطاع ✓

$L=\alpha R \Rightarrow 3\times\frac{\pi}{6}=\frac{\pi}{2}$

(محیط) $P=3+3+\frac{\pi}{2}=\boxed{6+\frac{\pi}{2}}$ محیط قطاع ✓ ۲

۴



$S=\frac{1}{2}ab\sin\alpha=\frac{1}{2}\times 5\times 8\times\sin 60^\circ \Rightarrow$

$\frac{1}{2}\times 8\times 5\times\frac{\sqrt{3}}{2}=\frac{20\sqrt{3}}{2}=10\sqrt{3}$ ✓ مساحت مثلث

$c^2=a^2+b^2-2ab\cos\alpha \Rightarrow 25+64-(2\times5\times8\times\frac{1}{2})=89-40=49$

$\Rightarrow c^2=49 \Rightarrow c=\sqrt{49}=7 \Rightarrow P=5+8+7=\boxed{20}$ ✓ ۲

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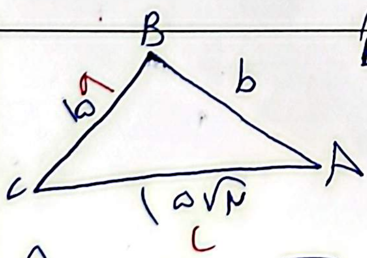

$\hat{B}+\hat{C}=150 \Rightarrow \hat{A}=180-150=30^\circ$

$AC=15\sqrt{2}$

$BC=15$

$\frac{a}{\sin A}=\frac{b}{\sin B}=\frac{c}{\sin C}$ ۲

$\frac{15}{\sin 30}=\frac{15\sqrt{2}}{\sin B} \Rightarrow \frac{15}{\frac{1}{2}}=\frac{15\sqrt{2}}{\sin B} \Rightarrow \sin B=\frac{15\sqrt{2}}{30}=\frac{\sqrt{2}}{2}$

$B=45^\circ \Rightarrow C=105^\circ$

$\hat{B}=45\times\frac{\pi}{180}=\boxed{\frac{\pi}{4}}$ ✓

$\hat{C}=105\times\frac{\pi}{180}=\boxed{\frac{7\pi}{12}}$ ✓

$$\frac{\tan(\pi-\alpha)+3\tan(\pi+\alpha)}{\tan(3\pi-\alpha)-\tan(2\pi+\alpha)} = \frac{-\tan\alpha+3\tan\alpha}{-\tan\alpha-\tan\alpha} = \frac{2\tan\alpha}{-2\tan\alpha} = -1$$ ۶

(۲)

$\tan\frac{\pi}{12}=\alpha \Rightarrow \alpha = 15^\circ \Rightarrow A = \frac{2\tan 75^\circ + \tan 105^\circ}{3\tan 165^\circ - \tan 255^\circ} = \frac{2\tan(\frac{\pi}{2}-15^\circ)+\tan(\frac{\pi}{2}\ldots}{3\tan(\pi-15^\circ)-\tan(\frac{3\pi}{2}-\ldots}$

$\cot 15^\circ$

$$\Rightarrow \frac{2\cot 15^\circ - \cot 15^\circ}{-3\tan 15^\circ - \cot 15^\circ} = \frac{\frac{1}{\alpha}}{-3\alpha-\frac{1}{\alpha}} = \frac{-1}{3\alpha^2+1}$$ ۷

(۲)

$$\frac{\sin x+\cos x}{\sin x-\cos x}+\frac{\sin x-\cos x}{\sin x+\cos x}=3$$

(۲)

$\tan^2 x ? \Rightarrow \frac{(\sin x+\cos x)^2+(\sin x-\cos x)^2}{\sin^2 x-\cos^2 x} = \frac{\sin^2+\cos^2+2\sin\cos+\sin^2+\cos^2-2\sin\cos}{\sin^2 x-\cos^2 x}$ ۸

$\Rightarrow \frac{2(\sin^2+\cos^2)}{\sin^2-\cos^2} = \frac{2}{\sin^2 x-\cos^2 x} = 3 \Rightarrow 2 = 3(1-\cos^2 x-3\cos^2 x)$

$-6\cos^2 x = -1 \Rightarrow \cos^2 x = \frac{1}{6}$

$1+\tan^2 = \frac{1}{\cos^2}$, $\tan^2 = 5$

$$\frac{\sin^2 x-2\cos^2 x+1}{\sin^2 x+2\cos^2 x-1}=4 \quad \xrightarrow{\sin^2 = 1-\cos^2} \quad \sin^2 x-2\cos^2 x+1 = (1-\cos^2 x)-2\cos^2 x\ldots$$

$2-3\cos^2 x \Rightarrow$ صورت

$\sin^2+2\cos^2 x-1 = (1-\cos^2 x)+2\cos^2 x-1 = \cos^2 x \Rightarrow$ مخرج ۹

$\frac{3-3\cos^2 x}{\cos^2 x} = 4 \Rightarrow 2-3\cos^2 x = 4\cos^2 x \Rightarrow 7\cos^2 x = 2 \Rightarrow \cos^2 x = \frac{2}{7}$

$\Rightarrow 1+\tan^2 x = \frac{1}{\cos^2 x} \Rightarrow \tan^2 x = \frac{5}{2}$

(۲)

الف) $\cos(22{,}5^\circ) = \cos^2 x = \frac{1+\cos 2x}{2} \Rightarrow \cos^2(22{,}5^\circ) = \frac{1+\cos 45^\circ}{2}$

$\Rightarrow \cos^2(22{,}5^\circ) = \frac{1+\frac{\sqrt{2}}{2}}{2} \Rightarrow \cos(22{,}5^\circ) = \pm\sqrt{\frac{1+\frac{\sqrt{2}}{2}}{2}} = \sqrt{\frac{2+\sqrt{2}}{4}} = \frac{\sqrt{2+\sqrt{2}}}{2}$ ۱۰

ناحیه اول مثبت چون

ب) $\sin(67{,}5^\circ) = \cos(22{,}5^\circ) = \frac{\sqrt{2+\sqrt{2}}}{2}$

(۲)