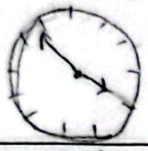
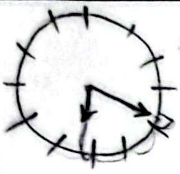
مشاق

۱۸٫۵

نام و نام خانوادگی .... پاسخنامه تشریحی تکلیف شماره ..۱۹.. کلاس ..A..

$\alpha = \lvert 5{,}5m - 30h \rvert$ $\alpha = \lvert 5{,}5 \times 54 - 30 \times 3 \rvert = 207$ $360 - 207 = 153^\circ$ = (ب $11 \times 27 = 297$ الف)  $4 \times 30 + 6 = 126 + 27 = 153^\circ$ $\frac{54}{60} = \frac{27}{30}$ ۵	۱
الف)  $2 \times 30 + 2 \times 6 + 9 = 81^\circ$ ب) $\lvert 5{,}5m - 30h \rvert = \lvert 5{,}5 \times 18 - 30 \times 6 \rvert = 81^\circ$ ($11 \times 9 = 99$, 180) ۵	۲
الف) $S = \frac{\alpha}{2} R^2 = \frac{\frac{\pi}{6}}{2} \times 3^2 = \frac{\pi}{12} \times 9 = \frac{3\pi}{4}$ ب) ~~$P = \alpha R = \frac{\pi}{6} \times 3 = \frac{\pi}{2}$~~ $P = \alpha r + 2r = 2(3) + \frac{\pi}{6}(3) = 6 + \frac{\pi}{2}$ ۱	۳
الف) $S = \frac{1}{2} \times 5 \times 8 \times \sin 60 = 10\sqrt{3}$ $a = \sqrt{25 + 64 - 2 \times 5 \times 8 \times \cos 60} = \sqrt{49} = 7$ $P = 5 + 8 + 7 = 20$ ۲	۴
$B + C = 150 \rightarrow a = 30^\circ$ $\frac{15}{\frac{1}{2}} = \frac{15\sqrt{2}}{?} \rightarrow ? = \frac{\sqrt{2}}{2} \rightarrow \hat{B} = 45 \times \frac{\pi}{180} = \frac{\pi}{4}$ $150 - 45 = 105 \times \frac{\pi}{180} = \frac{7\pi}{12} = \hat{C}$ ۵	۵

$\frac{-\tan\alpha + 3\tan\alpha}{-\tan\alpha - 1\tan\alpha} = \frac{2\tan\alpha}{-2\tan\alpha} = -1$ ۲	۶
$\frac{2\tan(\frac{\pi}{2}-\frac{\pi}{12})+3\tan(\frac{\pi}{2}+\frac{\pi}{12})}{3\tan(\pi-\frac{\pi}{12})-\tan(\frac{3\pi}{2}-\frac{\pi}{12})} = \frac{2\cot\frac{\pi}{12}-\cot\frac{\pi}{12}}{-3\tan\frac{\pi}{12}-\cot\frac{\pi}{12}} = \frac{\cot\frac{\pi}{12}}{-3a-\frac{1}{a}} = \frac{\frac{1}{a}}{\frac{-3a^2-1}{a}} = \frac{-1}{3a^2+1}$ $-3a \qquad \frac{1}{\tan\frac{\pi}{12}} = \frac{1}{a}$ $\frac{1}{-3a-1}$ ۱,۵	۷
$\frac{\sin^2 x+\cos^2 x+2\sin x\cos x+\sin^2 x+\cos^2 x-2\sin x\cos x}{\sin^2 x+\cos^2 x} = \frac{2(\sin^2 x+\cos^2 x)}{\sin^2 x\cos^2 x} = 3$ $\sin^2 x-\cos^2 x = \frac{2}{3} \quad (\cos^2 x = 1-\sin^2 x) \quad 2\sin^2 x-1=\frac{2}{3} \to 2\sin^2 x=\frac{5}{3} \to \sin^2 x=\frac{5}{6} \to \cos^2 x=\frac{1}{6}$ $\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{5}{6}}{\frac{1}{6}} = 5$ ۲	۸
$\frac{\sin^2 x-2\cos^2 x+1}{\sin^2 x+2\cos^2 x-1} = \frac{1-\cos^2 x-2\cos^2 x+1}{\cos^2 x} = \frac{2-3\cos^2 x}{\cos^2 x} = \frac{2}{\cos^2 x}-3=4 \to \frac{2}{\cos^2 x}=7$ $(\sin^2 x+2\cos^2 x-1 = 1+\cos^2 x)$ $\cos^2 x=\frac{2}{7} \to \sin^2 x=\frac{5}{7} \qquad \tan^2 x=\frac{\sin^2 x}{\cos^2 x}=\frac{\frac{5}{7}}{\frac{2}{7}}=\frac{5}{2}=2,5$ ۲	۹
الف) $\cos^2\alpha = \frac{1+\cos 45}{2} = \frac{\frac{2+\sqrt{2}}{2}}{2} = \frac{2+\sqrt{2}}{4} \to \cos(22,5) = \frac{\sqrt{2+\sqrt{2}}}{2}$ $(\alpha = 22,5)$, $\cos 45 = \frac{\sqrt{2}}{2}$ ب) $\sin^2\alpha = \frac{1-\cos 135}{2} = \frac{\frac{2+\sqrt{2}}{2}}{2} = \frac{2+\sqrt{2}}{4} \to \cos(67,5) = \frac{\sqrt{2+\sqrt{2}}}{2}$ $(\alpha = 67,5)$, $\cos 135 = -\frac{\sqrt{2}}{2}$ ۲	۱۰