نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۲ ... کلاس .....

۱

$$\frac{a\sin\frac{\pi}{3}+b\cos\frac{\pi}{4}\frac{-\sqrt{3}}{2}}{a\sin\frac{11\pi}{6}+b\cos\frac{\pi}{3}}=\tan\frac{a\pi}{6}\xrightarrow{\frac{-\sqrt{3}}{2}}\frac{\frac{-\sqrt{3}}{2}a-\frac{\sqrt{2}}{2}b}{-\frac{1}{2}a+\frac{1}{2}b}=\frac{\frac{-\sqrt{3}}{2}(a+b)}{\frac{1}{2}(b-a)}=\frac{-\sqrt{3}}{3}$$

$$\frac{a+b}{b-a}=\frac{1}{3}\rightarrow 3a+3b=b-a \qquad \frac{b}{a}=\frac{-5}{9}\ (-2)$$

$$2b=-4a\rightarrow b=-2a$$

۲

$P\left(\frac{1}{2},y\right)\xrightarrow{\text{دوار}}\theta=60^\circ\xrightarrow{\sin60^\circ=y}y=\frac{\sqrt{3}}{2}$

محیط $opp'=2r+pp'\xrightarrow{r=1}2+pp'$

$$pp'=\sqrt{op^2+op'^2-2(op)(op')\cos45^\circ}\rightarrow\sqrt{2+\sqrt{2}}$$

محیط $\rightarrow 2+\sqrt{2+\sqrt{2}}$

۳

$$\frac{Rad}{\pi}=\frac{D}{180}\rightarrow\frac{\pi}{9}=\frac{D}{180}\rightarrow D=20$$

30°	$1h$
20°	$?$

$\rightarrow \frac{2}{3}h\rightarrow 40\min$

$2:00''+00:40''\rightarrow 2:40''$

۴

$$\alpha=|a,am-30h|\rightarrow 20=|a,am-90|$$

$a,am-90\rightarrow+20\rightarrow m=20\min\rightarrow$ دفعه دوم

$\rightarrow -20\rightarrow m=\frac{70}{9a}=\frac{140}{11}\rightarrow$ دفعه اول

۵

$$-\frac{\pi}{6}<n\leq\frac{5\pi}{6}\qquad \sin n=\frac{m-3}{5}$$

$$-\frac{1}{2}<\sin n\leq 1\rightarrow -\frac{1}{2}<\frac{m-3}{5}\leq 1$$

$\sin-\frac{\pi}{6}=-\frac{1}{2}$

$\xrightarrow{\times 5}-\frac{5}{2}<m-3\leq 5\xrightarrow{+3}\frac{1}{2}<m\leq 8$

$\rightarrow$ اعداد ۱، ۲، ۳، ۴، ۵، ۶، ۷، ۸ (۸ تا)

۶

$$\frac{\sin\left(\frac{\pi}{2}+\alpha\right)+k\cos\left(\frac{3\pi}{2}-\alpha\right)}{\cos(\pi-\alpha)+2\sin(\alpha+\pi)}=\frac{\cos\alpha-k\sin\alpha}{-\cos\alpha-2\sin\alpha}=3 \qquad \alpha=15^\circ$$

$$1-k\tan\alpha=-6\tan\alpha-3 \rightarrow 1-\frac{k}{4}=-\frac{3}{2}-\frac{6}{2} \rightarrow \frac{k}{4}=\frac{11}{2} \qquad (k=22)$$

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$\cos\alpha<0$ ← ربع دوم

$\sin\alpha>0$

$$\frac{1-\cos\alpha}{1+\cos\alpha}=2 \rightarrow 1-\cos\alpha=2+2\cos\alpha \rightarrow 3\cos\alpha=-1$$

$$\cos\alpha=\frac{-1}{3}$$

$$\sin\alpha=\sqrt{1-\cos^2\alpha} \rightarrow \sqrt{1-\frac{1}{9}} \rightarrow \frac{2\sqrt{2}}{3} \rightarrow \tan\alpha=-\sqrt{8}$$

$$\cot\alpha=\frac{-1}{\sqrt{8}}=\frac{-\sqrt{8}}{8}$$

$$\frac{\tan\left(\frac{\pi}{2}-\alpha\right)-\cot(\pi-\alpha)}{\cot\left(\frac{3\pi}{2}-\alpha\right)+2\tan(2\pi-\alpha)}=\frac{\cot\alpha+\cot\alpha}{\tan\alpha-2\tan\alpha}=\frac{\frac{2\cos\alpha}{\sin\alpha}}{\frac{-\sin\alpha}{\cos\alpha}}=\frac{2\cos\alpha}{-\sin^2\alpha}=\frac{-2\cos^2\alpha}{\sin^2\alpha}=-2\cot^2\alpha$$

$$\Rightarrow -2\times\frac{1}{8}=\frac{-1}{4}$$

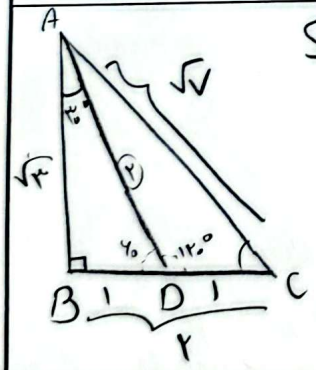
۸

$$108\times\frac{\pi}{180}=\frac{3\pi}{5}$$

$$\text{طول کمان}=\alpha R \rightarrow \frac{3\pi}{5}R_A=\frac{9\pi}{10}R_B \rightarrow R_A=\frac{3}{2}R_B$$

$$\frac{S_A}{S_B}=\left(\frac{R_A}{R_B}\right)^2 \rightarrow \left(\frac{3}{2}\right)^2 \rightarrow \frac{9}{4}=2\frac{1}{4}$$

۹



$$S_{ABC}=\sqrt{3} \qquad \sin\hat{C}=?$$

$$\frac{AB\times BC}{2}=\sqrt{3} \rightarrow \sqrt{3}\times BC=2\sqrt{3} \rightarrow BC=2$$

$$BD+DC=2 \rightarrow DC=1$$

$$AD=\frac{BD}{\sin 30^\circ} \rightarrow \frac{1}{\frac{1}{2}}=2$$

$$AB^2+1=4 \rightarrow AB=\sqrt{3}$$

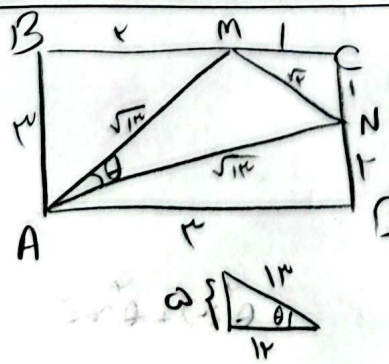
$$(BD)^2+(AB)^2=(AC)^2=3+4=7 \rightarrow AC=\sqrt{7}$$

$$\sin 2\hat{C}=2\sin\hat{C}\cos\hat{C} \rightarrow 2\times\frac{\sqrt{3}}{\sqrt{7}}\times\frac{\sqrt{7}}{\sqrt{7}}=\frac{4\sqrt{3}}{7}$$

AD میانه است $\Rightarrow S_{ABD}=S_{DCA}$

$$\frac{1\times\sqrt{3}}{2}=\frac{1}{2}\times 1\times\sqrt{7}\times\sin\hat{C} \qquad \sin\hat{C}=\frac{\sqrt{3}}{\sqrt{7}}$$

۱۰



$$\sin\theta=?$$

$$MN=\sqrt{2},\ AM=AN=\sqrt{13}$$

$$(MN)^2=(AM)^2+(AN)^2-2(AM)(AN)\cos\theta$$

$$2=26-26\cos\theta \rightarrow 24\cos\theta=24$$

$$\cos\theta=\frac{12}{13}$$

اعداد فیثاغورسی $\rightarrow 5,12,13$

$$\sin\theta \Rightarrow \frac{\text{مقابل}}{\text{وتر}} \rightarrow \frac{5}{13}$$