نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..72.. کلاس .....

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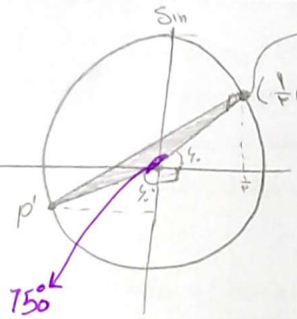
$$\frac{a\sin(\pi+\frac{\pi}{3})+b\cos(\pi+\frac{\pi}{6})}{a\sin(\frac{2\pi}{3}-\frac{\pi}{6})+b\cos\frac{\pi}{3}}=\frac{-a\sin\frac{\pi}{3}-b\cos\frac{\pi}{6}}{-a\sin\frac{\pi}{6}+b\cos\frac{\pi}{3}}=\tan(\pi-\frac{\pi}{6})=-\tan\frac{\pi}{6}$$

$$\frac{-a(\frac{\sqrt{3}}{2})-b(\frac{\sqrt{3}}{2})}{-a(\frac{1}{2})+b(\frac{1}{2})}=-\frac{1}{\sqrt{3}}\rightarrow\frac{\sqrt{3}a}{2}+\frac{\sqrt{3}b}{2}=\frac{b}{2}-\frac{a}{2}\rightarrow 2b=-6a\rightarrow b=-3a$$

$$\frac{b}{a}=\frac{-3}{1}=\boxed{-3}$$

۲



$$P'\left(-\frac{\sqrt{3}}{2},\frac{1}{2}\right)$$

$$\text{محیط}=1+1+\frac{\sqrt{2}+\sqrt{6}}{2}=\boxed{\frac{4+\sqrt{2}+\sqrt{6}}{2}}$$

فاصله نقطه $\rightarrow\sqrt{(\frac{1+\sqrt{3}}{2})^2+(\frac{1+\sqrt{3}}{2})^2}=\sqrt{2(\frac{1+\sqrt{3}}{2})^2}$

$$(\frac{1+\sqrt{3}}{2})\sqrt{2}$$

۳

$\frac{\pi}{9}=20°$ $\quad 60'=1h\rightarrow 30°$

$40'\rightarrow 20°$

ساعت $2:40'$ خواهد بود

۴

$$|\frac{11}{2}m-30|=15\rightarrow\frac{11}{2}m-90=30\rightarrow\frac{11}{2}m=120\rightarrow\boxed{m=20'}\rightarrow$$ بار دوم

$$\rightarrow\frac{11}{2}m-90=-30\rightarrow\frac{11}{2}m=60\rightarrow m=\frac{120'}{11}$$ بار اول

$$m\simeq 12,7$$

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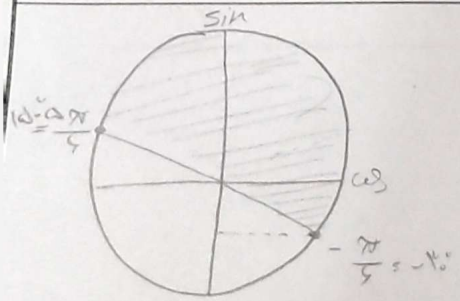
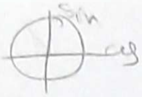


$$\frac{1}{2}<\frac{m-3}{5}\leq 1\rightarrow\frac{5}{2}<m-3\leq 5$$

$$5,5<m\leq 8$$

$6,7,8\leftarrow$ ۳ عدد صحیح



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$$\frac{\sin(\frac{\pi}{2}+15°)+k\cos(\frac{3\pi}{2}-15°)}{\cos(\pi-15°)+2\sin(\pi+15°)}=\frac{\cos15°-k\sin15°}{-\cos15-2\sin15}\xrightarrow{\div\cos15°}$$

$$\frac{1-k\tan15°}{-1-2\tan15°}=3\to\frac{1-\frac{1}{4}k}{-1.5}=3\to-4.5=1-\frac{1}{4}k$$

$$+5.5=+\frac{1}{4}k \qquad \boxed{k=22}$$

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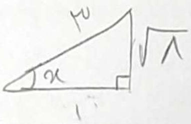
$$\frac{\tan(\frac{\pi}{2}-x)-\cot(\pi-x)}{\cot(\frac{3\pi}{2}-x)-2\tan(2\pi-x)}\to\frac{\cot x+\cot x}{\tan x-2\tan}=\frac{2\cot x}{-\tan x}=\frac{2(+\frac{1}{\sqrt8})}{-(+\sqrt8)}$$

ناحیه دوم

$$1-\cos x=2+2\cos x\to-3\cos x=1\to\cos x=-\frac{1}{3} \qquad -\frac{2}{8}=-\frac{1}{4}$$



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$$\frac{108}{180}=\frac{R}{\pi}\to R=\frac{6\pi}{10}=\frac{3\pi}{5}\xrightarrow{\text{طول کمان}} l_A=\frac{3\pi}{5}r_A \qquad \text{طول کمان} \Leftarrow r\theta=l$$

$$l_A=l_B=\frac{3\pi}{2}r_B=\frac{3\pi}{5}r_A\to\frac{3}{2}r_B=r_A \qquad \frac{S_A}{S_B}=\frac{r_A^2\theta}{r_B^2\theta}=\frac{\frac{9}{4}r_B^2}{r_B^2}$$

$$\Leftarrow \boxed{\frac{9}{4}}$$

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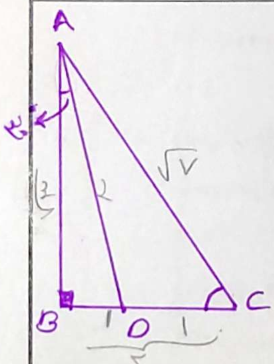

$$S_{ABC}=\sqrt3 \qquad S_{ABC}=S_{ABD}+S_{ADC} \qquad \sin2C=?$$

$$\frac{BD\times AB}{2}+\frac{AB\times DC}{2}=\sqrt3\to\sqrt3(1+DC)=2\sqrt3 \qquad \boxed{DC=1}$$

$$\sin C=\frac{\sqrt3}{\sqrt7} \qquad \cos C=\frac{2}{\sqrt7}$$

$$\sin2C=2\sin C\cos C\to2(\frac{\sqrt3}{\sqrt7})(\frac{2}{\sqrt7})=\boxed{\frac{4\sqrt3}{7}}$$

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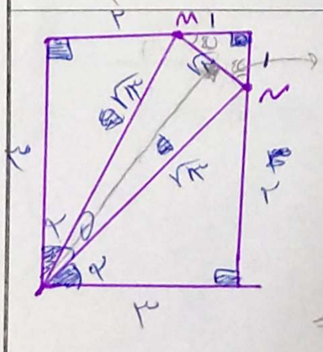
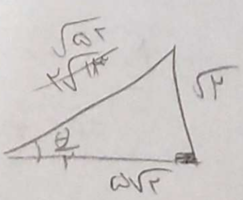


$$\sin\theta=? \qquad \sin\frac{\theta}{2}=\frac{\sqrt2}{2\sqrt{13}}$$



$$\sin\theta=2\sin\frac{\theta}{2}\cos\frac{\theta}{2}$$

$$\sin\theta=2(\frac{\sqrt2}{2\sqrt{13}})(\frac{5\sqrt2}{2\sqrt{13}})$$

$$\boxed{\sin\theta=\frac{5}{13}}$$