نام و نام خانوادگی ......علی سا...... پاسخنامه تشریحی تکلیف شماره ...۱۲... کلاس ...دوازدهم ب...

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$= \frac{-a\frac{\sqrt{3}}{2} - b\frac{\sqrt{3}}{2}}{-\frac{a}{2} + \frac{b}{2}} = -\frac{\sqrt{3}}{3} \Rightarrow \frac{b+a}{b-a} = \frac{1}{3} \Rightarrow 3b + 3a = b - a$

$2b = -4a \Rightarrow \frac{b}{a} = -2$

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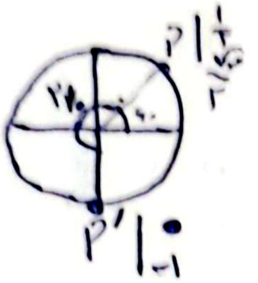

$PP' = \sqrt{R^2 + R^2 - 2R^2\cos 150}$

$PP' = \sqrt{2 + 2\times 1\times\frac{\sqrt{3}}{2}} = \sqrt{3}$

$\Rightarrow P_{OPP'} = \sqrt{3} + 2$

۳

$\frac{\frac{\pi}{9}}{\pi} = \frac{\alpha}{180} \Rightarrow \frac{1}{9} = \frac{\alpha}{180} \Rightarrow \alpha = 20 \Rightarrow$ دقیقه $= 40 \Rightarrow 20:40$

$\frac{1}{2}$ دقیقه

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$\alpha = |\frac{11}{2}M - 30H| \Rightarrow 20 = |\frac{11}{2}M - 90| \Rightarrow M = \frac{140}{11}$ غ ق ق

$\boxed{M = 20}$ ✓

$90 - \frac{11M}{2} = 20 \Rightarrow \frac{11M}{2} = 70 \Rightarrow M = \frac{140}{11}$ ✗

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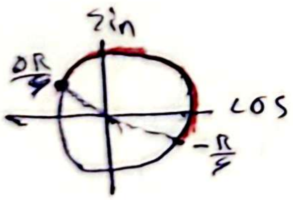

$-\frac{1}{2} < \frac{m-3}{5} \le 1 \Rightarrow -\frac{5}{2} < m - 3 \le 5 \Rightarrow \frac{1}{2} < m \le 8$

① $\sin(10\omega) = \sin(\frac{\pi}{2}+10\omega) = \cos(10\omega)$ ② $\cos(20\omega) = \cos(\frac{3\pi}{2}-10\omega) = -\sin 10\omega$

③ $\cos(19\omega) = \cos(\pi-10\omega) = -\cos(10\omega)$ ④ $\sin(19\omega) = \sin(\pi+10\omega) = -\sin(10\omega)$

$$\frac{\cos(10\omega)-k\sin(10\omega)}{-\cos(10\omega)-2\sin(10\omega)} = 2 \xrightarrow[\div\cos]{} \frac{1-k\tan(10\omega)}{-1-2\tan(10\omega)} = 2 \Rightarrow \frac{1-\frac{1}{4}k}{-1,0} = 2 \Rightarrow -\frac{1}{4}k+1 = -4,0$$

$$-\frac{1}{4}k = -\frac{11}{2} \Rightarrow \boxed{k = 11}$$

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⑪ $\tan(\frac{\pi}{2}-x) = \cot(x)$ ⑫ $\cot(\pi-x) = -\cot(x)$ ⑬ $\cot(\frac{3\pi}{2}-x) = \tan(x)$

⑭ $\tan(2\pi-x) = -\tan(x)$

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

$$\Rightarrow \frac{1-\cos x}{1+\cos x} = 2 \Rightarrow 2+2\cos x = 1-\cos x \Rightarrow 3\cos x = -1 \Rightarrow \cos x = -\frac{1}{3} \Rightarrow \sin x = \sqrt{1-\frac{1}{9}} = \frac{2\sqrt{2}}{3}$$

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

$$\frac{10}{18} = \frac{x}{\pi} \Rightarrow x = \frac{10\pi}{18} = \frac{5}{9}\pi \Rightarrow \frac{1}{2}r_A = \frac{\frac{5}{9}\pi}{\frac{\pi}{2}}r_B \Rightarrow r_A = \frac{5}{9}r_B$$

$$\frac{S_A}{S_B} = \frac{r_A^2\pi}{r_B^2\pi} = \left(\frac{r_A}{r_B}\right)^2 = \left(\frac{5}{9}\right)^2 = \frac{9}{4}$$ 1

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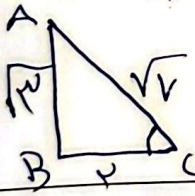
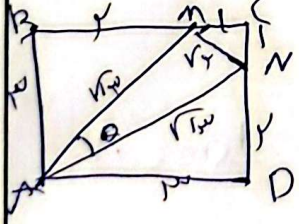
① $\tan 20 = \frac{1}{\sqrt{3}} \Rightarrow \frac{BD}{AB} = \frac{1}{\sqrt{3}} \Rightarrow AB = \sqrt{3}$ ② $\sin 30 = \frac{1}{2} \Rightarrow AD = 2$

③ $S_{ABC} = \frac{AB\times BC}{2} = \frac{\sqrt{3}\times BC}{2} = \sqrt{3} \Rightarrow BC = 2 \Rightarrow DC = 1 \Rightarrow AC = \sqrt{AB^2+BC^2}$

$= \sqrt{7} \Rightarrow$ 9



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



$AM = \sqrt{4+9} = \sqrt{13}$ $MN = \sqrt{2}$

$AN = \sqrt{4+9} = \sqrt{13}$

$$S_{AMN} = S_{ABCD} - S_{ABM} - S_{ADN} - S_{MNC} = 9 - 3 - \frac{1}{2} - 3$$ 10

$$\Rightarrow S_{AMN} = 9-6,0 = 2,0 \Rightarrow S_{AMN} = \frac{1}{2}AM\times AN\times\sin\theta = \frac{1}{2}\times\sqrt{13}\times\sqrt{13}\times\sin\theta = \frac{9}{2}$$

$$\Rightarrow 13\sin\theta = 9 \Rightarrow \boxed{\sin\theta = \frac{9}{13}}$$