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

۱

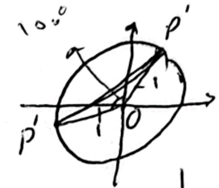
$$\frac{-\frac{\sqrt{3}}{2}(a) - \frac{\sqrt{3}}{2}(b)}{-\frac{1}{2}(a) + \frac{1}{2}(b)} = \frac{-\frac{\sqrt{3}}{2}(a+b)}{\frac{1}{2}(a-b)} = -\frac{1}{\sqrt{3}} \to -3a-3b = a-b$$

$$-4a = 2b$$

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

۲

$\frac{1}{2} = \cos\frac{\pi}{3} \to P = \cos\frac{\pi}{3}$ و $\sin\frac{\pi}{3} = \left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$



$-210^\circ = -\frac{7}{6}\pi \to \frac{\pi}{3} - \frac{7}{6}\pi = -\frac{5}{6}\pi \to P'$

$c = \sqrt{a^2+b^2-2ab\cos\theta} \to 2+2\cos\frac{5}{6}\pi \to P = 2+\sqrt{2+\sqrt{3}}$

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هر $\frac{\pi}{6}$ ← ۱ ساعت

$\frac{\pi}{9}$ ← ۴۰ دقیقه => ۲:۴۰

۴

$\left|\frac{11}{2}M - 30H\right| = 20 \to H = 3$

$\frac{11}{2}M - 90 = 20 \to M = 20$

$-\frac{11}{2}M + 90 = 20 \to M = \frac{140}{11} \simeq 12.72$ غ ق ق

برای اولین بار

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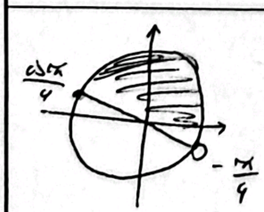

$-\frac{1}{2} < \sin x < 1 \to -\frac{1}{2} < \frac{m-3}{5} < 1 \to -\frac{5}{2} < m-3 < 5$

$\frac{1}{2} < m < 8 \to$ از ۱ تا ۷ ← ۷ عدد صحیح

۶

$$\frac{\cos\alpha - k\sin\alpha}{-\cos\alpha - 2\sin\alpha} \overset{\div\cos\alpha}{\Longrightarrow} \frac{1 - k\tan\alpha}{-1 - 2\tan\alpha} = 2 \rightarrow 1 - \frac{k}{2} = -\frac{9}{2}$$

$$\boxed{k = 22}$$

۷

$$2 + 2\cos x = 1 - \cos x \rightarrow \cos x = -\frac{1}{2} \rightarrow \sin x = \frac{2\sqrt{2}}{2}$$

$$\tan x = -2\sqrt{2}$$

$$\cot x = -\frac{\sqrt{2}}{4}$$

$$\frac{\cot x + \cot x}{\tan x - 2\tan x} = \frac{2\cot x}{-\tan x} = -\frac{2}{\tan^2 x} = \frac{2}{8} = \boxed{\frac{1}{4}}$$

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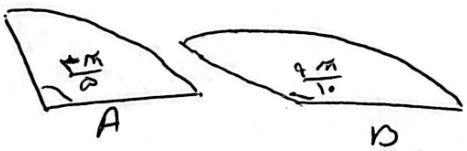

$$\rightarrow \frac{3\pi}{4} \times A = \frac{2\pi}{10} \times B \rightarrow \frac{A}{B} = \frac{5}{2}$$

$$\hookrightarrow S_A = A \times A \times \pi \qquad \hookrightarrow S_B = B \times B \times \pi \;?\; \frac{S_A}{S_B} = \left(\frac{A}{B}\right)^2 = \boxed{\frac{9}{4}}$$

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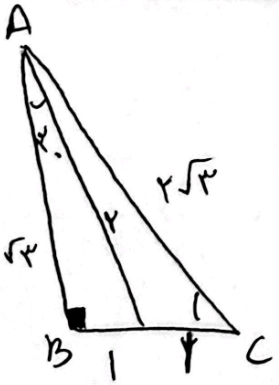

$$S_{ABC} = \frac{AB \times BC}{2} = \frac{\sqrt{2}}{2} \times B\hat{C} = \sqrt{3}$$

$$\sin 2\hat{C} = 2\sin\hat{C} \times \cos\hat{C} = 2 \times \frac{1}{2} \times \frac{\sqrt{3}}{2\sqrt{2}} = \boxed{\frac{\sqrt{3}}{3}}$$

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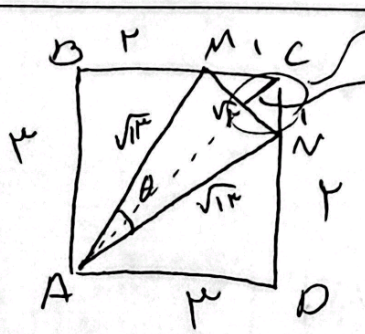

$$\rightarrow AH = AC - \frac{1}{\sqrt{2}} \rightarrow AC = 2\sqrt{2}$$

$$\hookrightarrow 2\sqrt{2} - \frac{\sqrt{2}}{2} = \frac{3\sqrt{2}}{2} - AH$$

$$\rightarrow \frac{1}{2} \times AH \times MN = \sin\theta \times AM \times AN \times \frac{1}{2}$$

$$\frac{3\sqrt{2}}{2} \times \sqrt{2} = 3 \times \sin\theta \times 11$$

$$\hookrightarrow \boxed{\sin\theta = \frac{3}{11}}$$