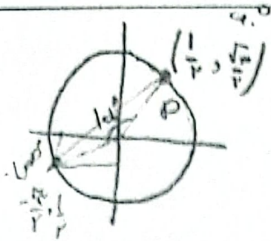


نام و نام خانوادگی: امیرعلی کبریا
پاسخنامه تشریحی تکلیف شماره ۲... کلاس:
A



$$y_0 = y_1 = 1/2$$

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

$$\underline{PP'} = 2 + \sqrt{2+\sqrt{3}}$$

$$(PP')^2 = R^2 + R^2 - 2R^2 \cos 120^\circ = 1+1+2 \times 1 \times \frac{1}{2} = 2 \Rightarrow PP' = \sqrt{2} \quad \left[\begin{matrix} P_{app} = \sqrt{2+2} \end{matrix} \right]$$

$$\frac{a \sin \frac{\pi}{2} + b \cos \frac{\pi}{2}}{a \sin \frac{11\pi}{2} + b \cos \frac{11\pi}{2}} = \frac{a \frac{1}{2} + b \frac{\sqrt{3}}{2}}{-\frac{a}{2} + \frac{b}{2}} = \frac{1}{\sqrt{3}}$$

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

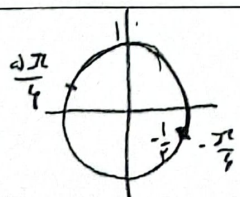
$$3b+3a=b-a$$

$$4a = -4b \Rightarrow \frac{b}{a} = -1$$

$$\frac{\pi}{9} = \frac{\alpha}{120} \Rightarrow \frac{1}{9} = \frac{\alpha}{120} \Rightarrow \alpha = 20^\circ \rightarrow \text{ضعیف (ضعیف)} \quad \text{Min } \epsilon_0' \Rightarrow 2: \epsilon_0'$$

$$\alpha = \left| \frac{11M}{r} - 90^\circ \right| \Rightarrow \gamma_0 = \left| \frac{11M}{r} - 90^\circ \right| \quad \left[\begin{matrix} M = \frac{14}{11} \\ M = 2 \end{matrix} \right] \checkmark$$

$$90^\circ - \frac{11M}{r} = \gamma_0 \Rightarrow \frac{11M}{r} = 90^\circ \Rightarrow M = \frac{14}{11}$$



$$-\frac{1}{2} < \frac{M}{2} < 1 \Rightarrow -\frac{1}{2} < M < 2 \Rightarrow \frac{1}{2} < M < 1$$

$$\boxed{\frac{1}{2} < M < 1}$$

$$\frac{\sin\left(\frac{\pi}{\gamma} + \alpha\right) + k \cos\left(\frac{\pi}{\gamma} - \alpha\right)}{\cos\left(\frac{\pi}{\gamma} + \alpha\right) + \gamma \sin\left(\frac{\pi}{\gamma} - \alpha\right)} = \frac{\cos(\alpha) - k \sin(\alpha)}{-\cos(\alpha) + \gamma \sin(\alpha)} \xrightarrow{\gamma \cos \alpha} \frac{1 - k \tan \alpha}{-1 - \gamma \tan \alpha} = \gamma$$

$$1 - k \tan \alpha = -\gamma \tan \alpha - \gamma \Rightarrow 1 - \frac{k}{\gamma} = -\frac{\gamma}{\gamma} - \frac{\gamma}{\gamma} \Rightarrow \frac{k}{\gamma} = \frac{11}{\gamma} \Rightarrow k = 11 \quad \checkmark$$

$$\frac{\cot\left(\frac{\pi}{\gamma} - \alpha\right) - \cot\left(\frac{\pi}{\gamma} - \alpha\right)}{\tan\left(\frac{\pi}{\gamma} - \alpha\right) - \gamma \tan(\alpha)} = \frac{\gamma \cot(\alpha)}{-\tan \alpha} = \frac{\gamma \frac{\cos \alpha}{\sin \alpha}}{-\frac{\sin \alpha}{\cos \alpha}} = -\gamma \cot(\alpha) = -\gamma \frac{\frac{\gamma}{\gamma}}{\frac{1}{\gamma}} = \gamma \sqrt{\gamma}$$

$\cot \alpha = \frac{1}{\sqrt{\gamma}}$

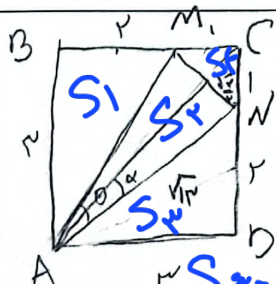
$\frac{1 - \cos x}{1 + \cos x} = \gamma \Rightarrow \gamma + \gamma \cos x = 1 - \cos x \Rightarrow \cos x = -\frac{1}{\gamma}, \sin x = \frac{\sqrt{\gamma}}{\gamma}$



$$\frac{\ln A}{\ln B} = \frac{\alpha}{\pi} \Rightarrow \alpha = \frac{\pi \ln A}{\ln B}$$

$$\frac{\pi}{\omega} R_1 = \frac{q}{\ln} \times R_2$$

$$\frac{R_1}{R_2} = \frac{q}{\frac{1}{\omega} \times \frac{q}{\pi}} = \frac{\pi}{\omega} \Rightarrow \frac{R_1}{R_2} = \frac{q}{\varepsilon} \Rightarrow \frac{\pi R_1}{\pi R_2} = \frac{q}{\varepsilon} \quad \checkmark$$

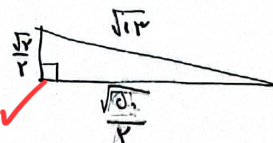


$$AN^2 = 9 + \varepsilon \sqrt{10} = AN = AM \quad \checkmark$$

$$MN = \sqrt{2} \quad \sin \alpha = \frac{\sqrt{2}}{\sqrt{10}}$$

$$S_{\text{total}} = S_1 + S_2 + S_3 + S_4 = \frac{\sqrt{10}}{\sqrt{10}}$$

$$9 = 1 + S_2 + 1 + \frac{1}{4} \rightarrow S_2 = \frac{1}{4}$$

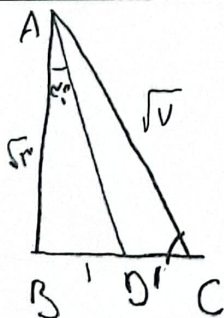


$$\sin \theta = \gamma \sin \alpha \cos \alpha = \frac{\sqrt{2} \times \sqrt{10}}{\sqrt{10} \times \sqrt{10}} = \frac{1}{\omega}$$

$$= \frac{\omega}{\gamma}$$

$$\frac{1}{\omega} = \frac{1}{\gamma} \times \sqrt{10} \times \sqrt{10} \times \sin \theta$$

$$\sin \theta = \frac{\omega}{\gamma \sqrt{10}}$$



$$\frac{AB}{BD} = \sqrt{10} \Rightarrow AB = \sqrt{10} \quad BC \times AB \times \frac{1}{\gamma} = \sqrt{10} \Rightarrow BC = \gamma$$

$$\sin \theta = \gamma \sin \alpha \cos \alpha \Rightarrow \frac{\sqrt{10} \times \gamma \times \gamma}{\gamma} = \frac{\varepsilon \sqrt{10}}{\gamma} \quad \checkmark$$