

مرساة جانی / تکلیف نمبر ۱۲

$$\frac{a \sin \frac{R}{\gamma} + b \cos \frac{R}{\gamma}}{a \sin \frac{11R}{\gamma} + b \cos \frac{R}{\gamma}} = \tan \frac{\omega R}{\gamma} \quad \frac{b}{a} ? \quad (1)$$

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

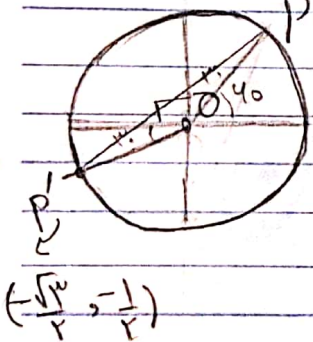
$$3a + 3b = -a + b \rightarrow 4a = -2b \rightarrow a = -\frac{b}{2}$$

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

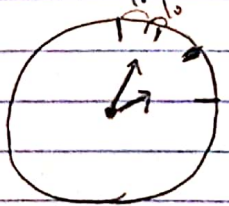
$$P(\frac{1}{\gamma}, \frac{\sqrt{3}}{\gamma}) = (\frac{1}{\gamma}, \frac{\sqrt{3}}{\gamma})$$

$$PP' = \sqrt{(\frac{\sqrt{3}}{\gamma} - (-\frac{1}{\gamma}))^2 + (\frac{1}{\gamma} - (-\frac{\sqrt{3}}{\gamma}))^2} = \sqrt{4 + 4} = 2$$

$$\underline{\text{مسافت}} = 1 + 1 + \sqrt{4 + 4} = 2 + \sqrt{4 + 4}$$



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



چونکہ دھبیہ
مسا، ۲ برابر
مربعی مثلث
مسا، اسلئے
 $\Rightarrow 20 \times 2 = 40$ $2:40$

(۴)

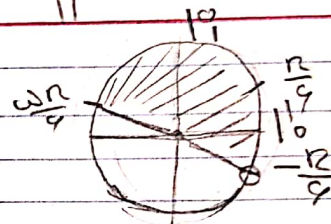
$$\alpha = \left| \frac{11M}{r} - 10 \right| \rightarrow V_0 = \left| \frac{11M}{r} - 10 \right| \rightarrow$$

$$I: \frac{11M}{r} - 10 = V_0 \rightarrow \frac{11M}{r} = 110 \rightarrow M = \frac{110 \times r}{11} = 20 \rightarrow \text{برای بار دوم}$$

$$II: \frac{11M}{r} - 10 = -V_0 \rightarrow \frac{11M}{r} = 70 \rightarrow M = \frac{70 \times r}{11} \approx 13$$

$$-\frac{\pi}{2} < \alpha \leq \frac{\pi}{2}$$

$$\sin \alpha = \frac{m - 10}{\omega}$$



(۵)

$$-\frac{1}{r} < \sin \alpha \leq 1 \rightarrow$$

$$-\frac{1}{r} < \frac{m - 10}{\omega} \leq 1 \xrightarrow{\times \omega} -\frac{\omega}{r} < m - 10 \leq \omega \xrightarrow{+10} \frac{1}{r} < m \leq \omega + 10$$

(۶)

$$\sin(10^\circ) + k \cos(10^\circ) = 10 \quad \tan k^\circ = 0.176$$

$$\cos(10^\circ) + 10 \sin(10^\circ)$$

$$\frac{\sin\left(\frac{r}{r} + 10\right) + k \cos\left(\frac{r}{r} - 10\right)}{\cos(r - 10) + 10 \sin(r + 10)} = 10 \rightarrow$$

$$\frac{\cos 10 - k \sin 10}{- \cos 10 - 10 \sin 10} = 10 \div \cos 10, \quad \frac{1 - k(0.176)}{-1 - 10(0.176)} = 10 \rightarrow$$

$$1 - k(0.176) = -10.76 \rightarrow \omega, \omega' = k(0.176) \rightarrow k = \frac{\omega / \omega' - 1}{0.176} = 22$$

⑤

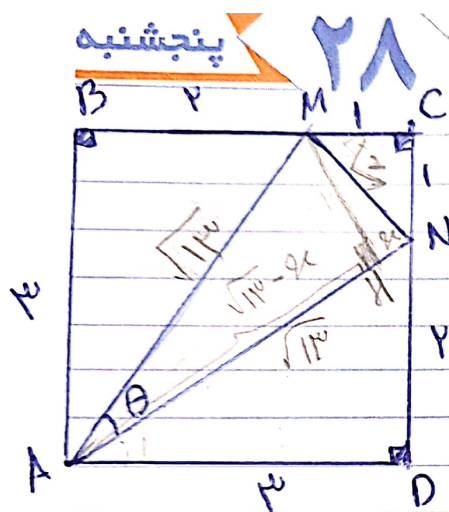
$$\frac{Y\sqrt{}}{Y}$$

5

①



[illegible]



$$\sin \theta = ?$$

$$MA = \sqrt{9+1} = \sqrt{10}$$

$$MH = \sqrt{1^2 - (1^2 - 2x\sqrt{1^2 + x^2})} = \sqrt{2x\sqrt{1^2 + x^2}} \rightarrow$$

$$MH^* = X \cancel{X} \sqrt{\mu} - \cancel{X} = X - \cancel{X} \rightarrow X = \frac{\sqrt{\mu}}{\mu}$$

$$MH = \sqrt{\gamma - \frac{1}{\mu}} = \sqrt{\frac{\gamma}{\mu}}$$

$$\sin \theta = \frac{\frac{v}{\mu}}{\sqrt{1\mu}} = \frac{v}{\mu g}$$