

مریم ٹوکی روزنامہ A سہ ماہی تعلیم سرگودھا

سوال (1)

$$\frac{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}{a \sin \frac{11\pi}{4} + b \cos \frac{\pi}{4}} = \tan \frac{\pi}{4} \quad \frac{b}{a} = ?$$

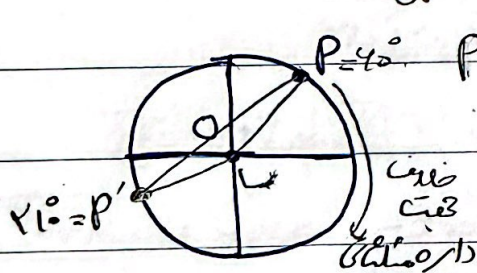
$$\rightarrow \frac{-\frac{a\sqrt{2}}{2} - \frac{b\sqrt{2}}{2}}{-\frac{a}{2} + \frac{b}{2}} = -\frac{\sqrt{2}}{2}$$

$$\tan \frac{\pi}{4} = \frac{\sin 150^\circ}{\cos 150^\circ} = \frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}} = -\frac{\sqrt{3}}{3}$$

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

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

$$\Rightarrow \sqrt{2}a = -b \quad \frac{b}{a} = -\frac{\sqrt{2}a}{a} = \boxed{-\sqrt{2}}$$



$$P = 45^\circ \quad P = \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right) \rightarrow \left(\frac{1}{\sqrt{2}}\right)^2 + \left(\frac{1}{\sqrt{2}}\right)^2 = 1$$

سوال (2)

$$\Rightarrow y^2 = \frac{r^2}{2} \Rightarrow y = \frac{\sqrt{2}r}{2} \Rightarrow P = 45^\circ$$

$$opp' = \frac{r}{\sqrt{2}} + \frac{r}{\sqrt{2}}$$

$$\hat{O} \text{ زاویہ } = 150^\circ$$

مقدار کسینوس

$$\frac{1}{2} = \cos 120^\circ$$

$$PP' = \sqrt{op^2 + op'^2 - 2(op)(op')\cos 150^\circ}$$

$$= \sqrt{r^2 + r^2 - 2(r)(r)\cos 150^\circ} = \sqrt{2r^2 + \sqrt{2}r^2} = \boxed{r\sqrt{2 + \sqrt{2}}}$$

سوال (3)

$$\frac{\pi}{9} \times \frac{180^\circ}{\pi} = 20^\circ$$

$$q_{\min} \xrightarrow{\text{ساعت}} 20^\circ$$

بائناسیہ میزان معلوم کرنے

$$\boxed{C_{\text{true}} = 20^\circ}$$

$$\xleftarrow{\text{ساعت}} 20^\circ \xleftarrow{\text{تیمار}} q_{\min}$$

ساعت کا درست من اور مع

آپادانا

سوال ۴

$$\alpha = |\omega/\omega_M - r_0 h| \rightarrow r_0 = |\omega/\omega_M - q_0|$$

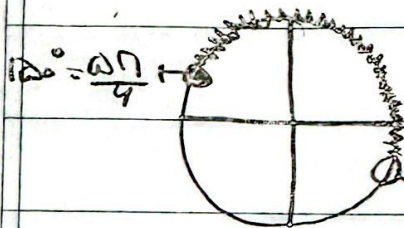
$$\downarrow \omega/\omega_M - q_0 = r_0 \rightarrow \boxed{m = r_0}$$

$$\downarrow \omega/\omega_M - q_0 = -r_0 \rightarrow m = \frac{r_0}{\omega/\omega_M} = \frac{140}{11}$$

ب، اول

$$-\frac{\pi}{4} \leq \alpha \leq \frac{\pi}{4} \quad \sin \alpha = \frac{m-r}{a}$$

سوال ۵



$$-\frac{1}{r} \leq \sin \alpha \leq 1 *$$

$$-\frac{\pi}{4} = 150^\circ \rightarrow \sin 150^\circ = -\frac{1}{2}$$

$$* \rightarrow -\frac{1}{r} \leq \frac{m-r}{a} \leq 1 \xrightarrow{\times a} -\frac{a}{r} \leq m-r \leq a \xrightarrow{+r} \frac{1}{r} \leq m \leq 1$$

$\boxed{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12} \in \mathbb{N}$ و $1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$ = صحیح = صحیح

$$k=5 \quad \frac{\sin(10^\circ) + k \cos(140^\circ)}{\cos(140^\circ) + r \sin(140^\circ)} = r \quad \tan 10^\circ = 0.176$$

سوال ۶

$$\rightarrow \frac{\sin(\frac{\pi}{p} + 10^\circ) + k \cos(\frac{r\pi}{r} - 10^\circ)}{\cos(\pi - 10^\circ) + r \sin(\pi + 10^\circ)} = r \rightarrow \frac{\cos k - k \sin 10^\circ}{-\cos k - r \sin 10^\circ} = r$$

$$\div \cos 10^\circ \rightarrow \frac{1 - k \tan 10^\circ}{-1 - r \tan 10^\circ} = r \Rightarrow \frac{1 - 0.176k}{-1.1} = r \Rightarrow 1 - 0.176k = -1.1r$$

$$\Rightarrow -0.176k = -1.1r \Rightarrow \boxed{k = 2r}$$

آپادانا

$$\frac{1 - \cos \alpha}{1 + \cos \alpha} = r$$

$$\frac{\tan\left(\frac{\pi}{4} - \alpha\right) - \cot(\pi - \alpha)}{\cot\left(\frac{\pi}{4} - \alpha\right) + r \tan(\pi - \alpha)} = ?$$

(سوال ٧)

$$\rightarrow r + r \cos \alpha = 1 - \cos \alpha \Rightarrow r \cos \alpha = -1 \Rightarrow \cos \alpha = -\frac{1}{r}$$

$$\cos^2 \alpha + \sin^2 \alpha = 1 \rightarrow \frac{1}{r^2} + \sin^2 \alpha = 1 \Rightarrow \sin^2 \alpha = \frac{r^2 - 1}{r^2} \Rightarrow \sin \alpha = +\frac{\sqrt{r^2 - 1}}{r}$$

• $\cos \alpha = -1 \Rightarrow \sin \alpha = 0$ ← $\alpha = \pi$ ← $\alpha = 180^\circ$ *

$$\frac{\cot \alpha + \cot \alpha}{\tan \alpha - r \tan \alpha} = \frac{r \cot \alpha}{-\tan \alpha} = \frac{-r \cot^2 \alpha}{-1} = -r \left(\frac{r}{14} \right)$$

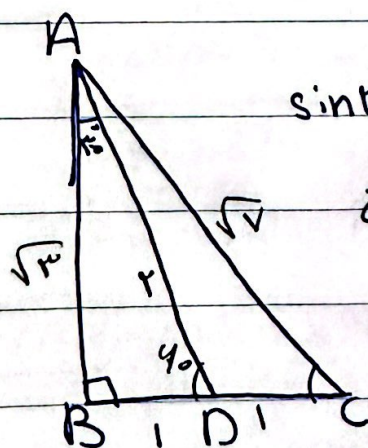
$$\cot \alpha = \frac{\cos \alpha}{\sin \alpha} = \frac{-\frac{1}{r}}{\frac{\sqrt{r^2 - 1}}{r}} = \frac{-1}{\sqrt{r^2 - 1}} = \frac{r \sqrt{r^2 - 1}}{r^2 - 1} = \frac{\sqrt{r^2 - 1}}{r}$$

$$= \boxed{-\frac{1}{r}}$$

(سوال ٨)

$$10 \times \frac{\pi}{180} = \frac{r \pi}{a} \quad \text{و } \angle \text{دایره} = \alpha R \rightarrow \frac{r \pi}{a} = \frac{r \pi}{R} \Rightarrow RA = 1, \Delta RB$$

$$\frac{SA}{SB} = \left(\frac{RA}{RB} \right)^r = \left(\frac{1, \Delta RB}{RB} \right)^r = \boxed{\frac{r \sqrt{r^2 - 1}}{r^2 - 1}}$$



$$\sin \alpha = ?$$

(سوال ٩)

$$\text{در } \triangle ABD \rightarrow \sin \alpha = \frac{AD}{r} \Rightarrow 1 = \frac{AD}{r} \Rightarrow AD = r$$

$$\text{در } \triangle ABD \rightarrow \cos \alpha = \frac{AB}{r} = \frac{\sqrt{3}}{r} \Rightarrow AB = \sqrt{3}$$

$$S_{\triangle ABC} = \frac{AB \times BC}{2} \Rightarrow \sqrt{3} = \frac{\sqrt{3} \times BC}{2} \Rightarrow BC = 2 \rightarrow BD + DC = 2$$

$$\Rightarrow DC = 1 \quad AC = \frac{BC}{2} + \frac{AB}{r} \Rightarrow AC = \sqrt{2}$$

• $\alpha = 45^\circ$ •

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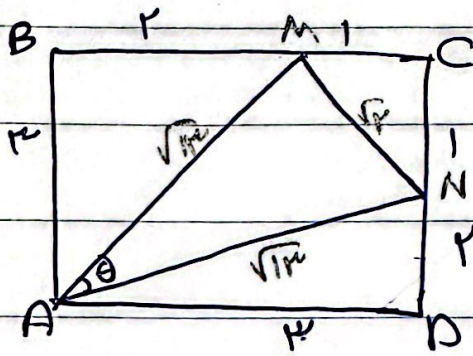
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$$\sin^2 \hat{C} = r \sin \hat{C} \cos \hat{C} \quad \sin \hat{C} = \frac{\sqrt{r}}{\sqrt{v}} \quad \underbrace{\sin^2 \hat{C}}_{\frac{r}{v}} + \underbrace{\cos^2 \hat{C}}_{\frac{r}{v}} = 1$$

$$\frac{r}{v} \Rightarrow \cos \hat{C} = \frac{r}{\sqrt{v}}$$

$$\Rightarrow \sin^2 \hat{C} = r \times \frac{\sqrt{r}}{\sqrt{v}} \times \frac{r}{\sqrt{v}} = \boxed{\frac{r\sqrt{r}}{v}}$$



$$\sin \theta = ?$$

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$$MN = \sqrt{r} \quad AM = AN = \sqrt{r}$$

$$\frac{MN^2}{r} = \frac{AM^2}{r} + \frac{AN^2}{r} - \frac{(AM)(AN)\cos \theta}{r}$$

$$\Rightarrow r = r - r \cos \theta \Rightarrow r \cos \theta = r \Rightarrow \cos \theta = \frac{r}{r}$$

$$\sin^2 \theta + \underbrace{\cos^2 \theta}_{\frac{r}{r}} = 1 \Rightarrow \sin^2 \theta = \frac{r}{r} \Rightarrow \boxed{\sin \theta = \frac{r}{r}}$$