

19175 عالی

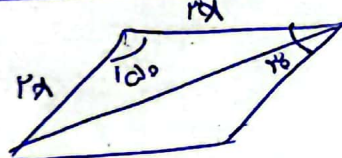
لطفا سوالات را به ترتیب حل کنید

سوال ۵

$$\begin{aligned} r \sin^2 \alpha + \cos^2 \alpha &= \frac{r}{r} = 1 & \sin^2 \alpha + \cos^2 \alpha &= 1 \\ \sin^2 \alpha + \frac{\sin^2 \alpha + \cos^2 \alpha}{1} &= \frac{r}{r} & \sin^2 \alpha &= \frac{r}{r} - \frac{r}{r} = 0 \quad \sin^2 \alpha = \frac{1}{r} \\ \sin^2 \alpha &= 1 - \cos^2 \alpha & \frac{1}{r} &= 1 - \cos^2 \alpha & \cos^2 \alpha &= \frac{r}{r} - \frac{1}{r} = \frac{r-1}{r} \\ \tan^2 \alpha &= \frac{\sin^2 \alpha}{\cos^2 \alpha} = \frac{\frac{1}{r}}{\frac{r-1}{r}} = \frac{1}{r-1} \end{aligned}$$

سوال ۷

$\Delta F \div r = P \div V$



$$\begin{aligned} r \times r \times \frac{1}{r} \times \sin 100^\circ &= rV & \frac{r^2}{r} &= rV & r^2 &= r \times r & r &= r \\ r &= r & r &= r & r &= r & r &= r \end{aligned}$$

$$(r \sin 100^\circ + r \cos 100^\circ) \times r = 10 \sqrt{11} = 6 \times 10 \times r$$

سوال ۳

$\sin \alpha = \frac{r \cos \alpha}{r}$

$$\begin{aligned} \sin \alpha &= \cos \alpha & \cos \alpha &= \sin \alpha & \cos \alpha &= \sin \alpha \\ \sin^2 \alpha &= 1 - \cos^2 \alpha & \cos^2 \alpha &= 1 - \sin^2 \alpha & \cos^2 \alpha &= 1 - \sin^2 \alpha \\ r^2 \sin^2 \alpha &= 1 - r^2 \cos^2 \alpha & r^2 \cos^2 \alpha &= 1 - r^2 \sin^2 \alpha & r^2 \cos^2 \alpha &= 1 - r^2 \sin^2 \alpha \end{aligned}$$

$$\sin a = \frac{\sqrt{2}}{10}$$

سؤال ١٤

$$\sin^2 a = 1 - \cos^2 a \quad \frac{2}{100} = 1 - \cos^2 a$$

$$\cos^2 a = 1 - \frac{2}{100} = \frac{98}{100} = \cos^2 a = \frac{\sqrt{98}}{10} = \cos a$$

(الف)

١, ٧٥

$$\begin{aligned} & \cos \frac{11\pi}{12} \cos a + \sin \frac{11\pi}{12} \sin a \\ & \sim -\frac{\sqrt{3}}{2} \cdot \frac{\sqrt{98}}{10} + \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{2}}{10} \\ & = \frac{-\sqrt{3} + 1}{10} \end{aligned}$$

$$\tan a = \frac{1}{\sqrt{3}} \quad \sin \frac{11\pi}{12} \times \sin a + \cos \frac{11\pi}{12} \times \cos a$$

$$\tan^2 a + 1 = \frac{1}{\cos^2 a} \quad \frac{1}{3} + \frac{4}{3} = \frac{5}{3} = \frac{1}{\cos^2 a}$$

$$\cos^2 a = \frac{3}{5} \Rightarrow \cos a = \frac{\sqrt{3}}{\sqrt{5}}$$

$$\frac{\sin a}{\cos a} = \frac{1/\sqrt{3}}{\sqrt{3}/\sqrt{5}} = \frac{1}{3} \Rightarrow \sin a = \frac{1}{\sqrt{5}}$$

$$\frac{11\pi}{12} = \frac{\pi}{12} + \frac{10\pi}{12} = \frac{\pi}{12} + \frac{5\pi}{6}$$

$$\frac{-\sqrt{3}}{2} + \frac{1/\sqrt{3}}{2} = \frac{-\sqrt{3} + 1}{2}$$

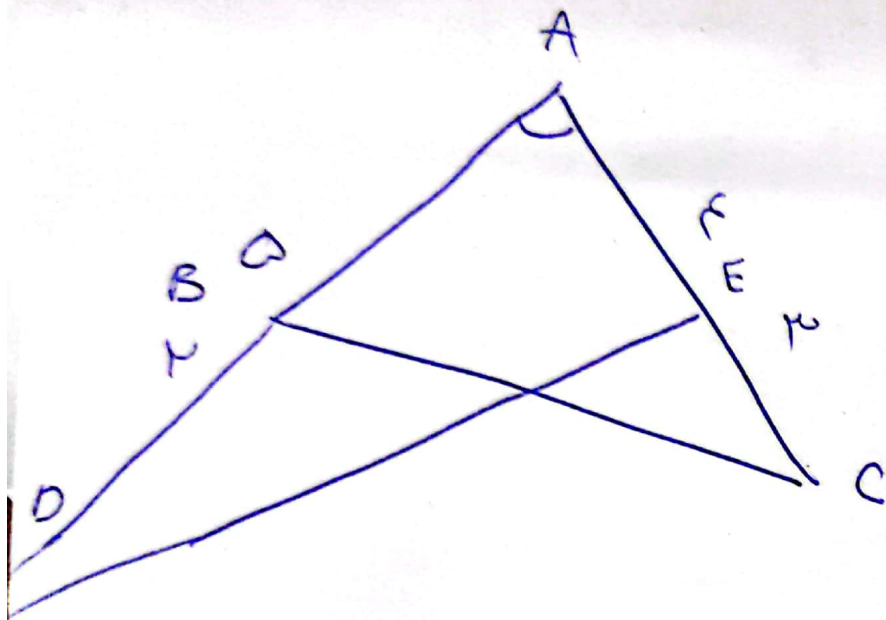
$$\frac{-\sqrt{3}}{2} \quad \sqrt{5} = \sqrt{5} \times \sqrt{2} = \sqrt{10}$$

$$\frac{-\sqrt{3}}{2} \times \frac{1}{\sqrt{5}} = -\frac{\sqrt{3}}{2\sqrt{5}}$$

$$\begin{aligned} \cos^2 a &= 1 - \sin^2 a \rightarrow \cos^2 a = 1 - \left(\frac{\sqrt{2}}{10}\right)^2 = 1 - \frac{2}{100} = \frac{98}{100} \\ \cos\left(\frac{11\pi}{12} + a\right) &= \cos\left(\frac{11\pi}{12} - \frac{\pi}{12} + a\right) = -\cos\left(a - \frac{\pi}{2}\right) \end{aligned}$$

$$-\left(\frac{\sqrt{3}}{2} \times \cos a + \frac{1}{2} \sin a\right) = -\frac{\sqrt{3}}{2} \left(-\frac{\sqrt{2}}{10} + \frac{\sqrt{2}}{10}\right) = -\frac{1}{2} \times -\frac{\sqrt{2}}{5} = \frac{\sqrt{2}}{10}$$

٢- الف



← 1 سوال

$$S_{ABC} = \underbrace{v \times r \times \frac{1}{r}}_{\frac{v}{r}} \times \sin A$$

$$S_{ADE} = \underbrace{\omega \times v \times \frac{1}{R}}_{\frac{\omega v}{R}} \times \sin A$$

$$\frac{v}{r} \sin A - \frac{v}{R} \sin A = 1/va$$

$$1/va = \frac{1}{v} \times \frac{v}{a} = \frac{1}{a}$$

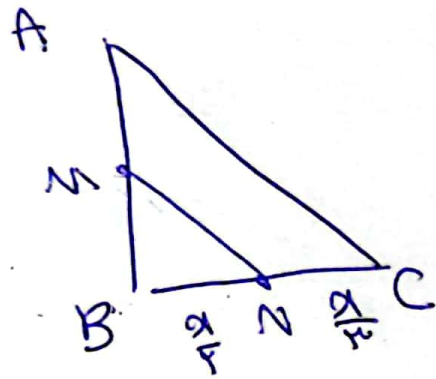
$$\sin A \left(\underbrace{\frac{v}{r} - \frac{v}{R}}_{\frac{1}{a}} \right) = \frac{1}{a} \quad \sin A = \frac{1}{a} \times \frac{a}{1} = \sin A = \frac{1}{a}$$

$$\cos^2 A = 1 - \sin^2 A$$

$$\cos^2 A = \frac{r}{R}$$

$$\tan^2 A = \frac{1}{\frac{r}{R}} = \frac{R}{r}$$

$$\tan A = \frac{1}{\sqrt{r}}$$



$$\frac{BM}{AM}$$

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$$\underbrace{\angle B N = \angle N C}_{\frac{x}{4}} \quad \angle = \angle N C = \angle N C = \frac{x}{4}$$

$$\cancel{\sin B \times \frac{1}{p} \times BM \times \frac{x}{4}} = \cancel{\sin B \times \frac{1}{p} \times AB \times \frac{x}{4}}$$

$$BM \times \frac{x}{4} = AB \times \frac{x}{4} \Rightarrow BM \times x = BM \times \frac{x}{4} + AM \times \frac{x}{4}$$

$$BM \times x - BM \times \frac{x}{4} = AM \times \frac{x}{4} \quad \cancel{BM} \left(\frac{4x}{4} - \frac{x}{4} \right) = AM \times \frac{x}{4}$$

$$BM \times \frac{3x}{4} = AM \times \frac{x}{4}$$

$$3BM = AM \Rightarrow$$

$$\frac{3BM}{AM} = \boxed{\frac{3}{1}}$$

1A

B gaw Chapitres

$$\cot \alpha = \frac{\cos \alpha}{\sin \alpha}$$

$$\cot \alpha = r \quad \checkmark \quad r \text{ جيب}$$

$$\cos \alpha = r \alpha$$

$$\sin \alpha = \alpha$$

$$\frac{r \cos \alpha - \sin \alpha}{\cos \alpha + \sin \alpha} = \frac{r \alpha - \alpha}{r \alpha + \alpha} = \frac{11 \alpha}{\alpha} = \frac{11}{1}$$

$\checkmark$

2

$$\frac{1}{\sqrt{\cos^2 \alpha}} - \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|}$$

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\cot \alpha}$$

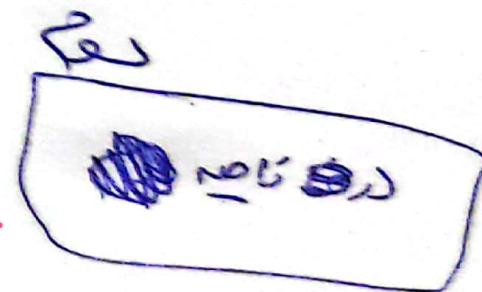
$$\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow \cos \alpha = -$$

$$\frac{|\sin \alpha|}{\cos \alpha} = \frac{-\cos \alpha}{\sin \alpha}$$

$$\Rightarrow \cos \alpha = - \sin \alpha = -$$

$$|\sin \alpha| = -\frac{\cos^2 \alpha}{\sin \alpha}$$

$\Rightarrow$



سوال 10

2

$$\text{وإ) } \tan \frac{11\pi}{\pi} + \sin \frac{10\pi}{\pi} \times \cos \frac{13\pi}{\pi} = -1 + \left(-\frac{\sqrt{r}}{r}\right) \left(-\frac{r}{r}\right) \boxed{-\frac{1}{r}} \leftarrow \text{سؤال 4}$$

$$\tan \frac{11\pi}{\pi} \times \frac{10}{r} = r \sin \alpha \rightarrow r \sin \alpha + 13\pi = 4 \tan 13\pi = -1$$

$$\sin \frac{10\pi}{\pi} \times \frac{10}{r} = 4 \cos \alpha \rightarrow r \cos \alpha + 13\pi = 4 \sin 13\pi = -\frac{\sqrt{r}}{r}$$

$$\cos \frac{13\pi}{\pi} \times \frac{10}{r} = 4 \sin \alpha \rightarrow r \sin \alpha + 13\pi = 4 \cos 13\pi = -\frac{\sqrt{r}}{r}$$

$$\text{ج) } \frac{10\pi}{r} = 2\pi + \frac{\pi}{r}, \quad \frac{11\pi}{\pi} = \pi - \frac{\pi}{r}, \quad \frac{10\pi}{\pi} = 3\pi + \frac{\pi}{r}$$

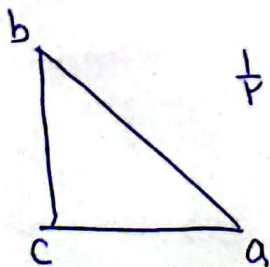
$$\tan \left(\frac{10\pi}{r} \right) = \tan \frac{\pi}{r} = \tan \left(\pi - \frac{\pi}{r} \right) = -\tan \left(\frac{\pi}{r} \right) = -\frac{\sqrt{r}}{r}$$

$$\sin \left(\frac{11\pi}{\pi} \right) = \sin \left(-\frac{\pi}{r} \right) = -\sin \left(\frac{\pi}{r} \right) = -\frac{\sqrt{r}}{r}$$

$$\cos \left(\frac{10\pi}{r} \right) = \cos \left(\pi + \frac{\pi}{r} \right) = \cos \left(-\frac{\pi}{r} \right) = -\frac{1}{r}$$

$$-\frac{\sqrt{r}}{r} \times -\frac{\sqrt{r}}{r} + -\frac{1}{r} = \frac{r}{r} - \frac{1}{r} \boxed{0}$$

~~$$\frac{\sin a}{\cos a} = \frac{r \cos a}{\cos a} = \tan a = r$$~~



$$\frac{1}{r} \times ab \times ac \times \sin a = \frac{1}{r} \times 4 \times \sqrt{r} \times \sin a = r \sin a$$

$$r \sqrt{r} \times \sin a = r = 4 \sin a = \frac{\sqrt{r}}{r} \quad \boxed{a = 40^\circ \text{ و } 140^\circ}$$

سؤال 4

