

$$\frac{12\omega}{110} = \frac{\text{Rad}}{\pi}$$

$$\frac{2V}{110} = \frac{\text{Rad}}{\pi}$$

الف ①

$$12\omega \times \frac{\pi}{110} = \frac{\pi}{1.44}$$

$$2V \times \frac{\pi}{110} = \frac{\pi}{9.4}$$

$$\frac{E\pi}{9} = \frac{D}{110}$$

$$\frac{\omega\pi}{12} = \frac{D}{110}$$

$$\frac{E\pi}{9} \times \frac{110}{\pi} = \cancel{110} \rightarrow 10^\circ$$

$$\frac{\omega\pi}{12} \times \frac{110}{\pi} = 10^\circ$$

$$12\omega a$$

$$\frac{9}{110} = \frac{D}{110}$$

$$\rightarrow \frac{12\omega a}{110} = \frac{D}{110} \rightarrow D = 12\omega a$$

$$\frac{a\pi}{1} \times \frac{110}{\pi} = 12\omega a$$

$$12\omega a + 12\omega a + 10a = 110 \rightarrow a(12\omega + 12\omega + 10) = 110$$

$$a = 4^\circ$$

$$\text{الف } \left(\frac{1}{2} \times \frac{\sqrt{3}}{2} \right) - \left(\frac{\sqrt{3}}{2} \times \frac{1}{2} \right) - (1 + 2) = -3$$

$$\frac{\left(\frac{\sqrt{3}}{2} \right)^2 + 1 + \left(\frac{\sqrt{3}}{2} \right)^2}{(\sqrt{3}) - \frac{\sqrt{3}}{2}} = \frac{\frac{3}{4} + 1 + 3}{\frac{2\sqrt{3}}{2}} = \frac{\frac{13}{4}}{\frac{2\sqrt{3}}{2}} = \frac{13}{2\sqrt{3}} = \frac{13\sqrt{3}}{6}$$

$$\left(\frac{1}{2} \times \frac{1}{2} \right) + \left(\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} \right) = \sin^2 \theta \rightarrow \frac{1}{4} = \sin^2 \theta \rightarrow \sin \theta = \frac{\sqrt{2}}{2}$$

الحل: $\sin \theta = \frac{\sqrt{2}}{2} \rightarrow \theta = 45^\circ \rightarrow \tan 45^\circ = 1$

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$$\frac{r \left(\frac{\sqrt{r}}{r} \right) \times \left(1 - \frac{r}{q} \right)}{\left(1 - \frac{r}{q} \right)^r} = \frac{\frac{r\sqrt{r}}{r} \times \frac{r}{r}}{\frac{r}{q}} = \frac{\frac{r\sqrt{r}}{q}}{\frac{r}{q}} = \sqrt{r} = \tan \theta$$

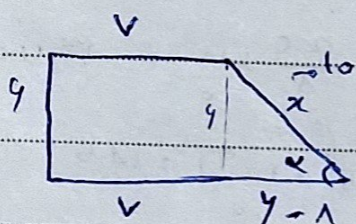
$$\theta = 45^\circ$$

$$90 \times \frac{\pi}{180} = \frac{\pi}{2}$$

$$\tan^2 \theta + 1 = \frac{1}{\cos^2 \theta} \rightarrow r + 1 = \frac{1}{\cos^2 \theta} = \frac{1}{\frac{1}{r}} = \cos \theta$$

$$\tan = \frac{\sin}{\cos} = \omega \frac{\sin}{\frac{1}{\sqrt{r}}} \rightarrow \sin = \frac{\omega}{\sqrt{r}}$$

$$\frac{10 \times \frac{\omega}{\sqrt{r}}}{\frac{1}{\sqrt{r}}} = \frac{1}{\sqrt{r}} = \frac{1.5}{\sqrt{r}} = 1.5$$



$$\sin \alpha = \frac{9}{x} = \frac{9}{10} \rightarrow x = 10$$

$$\sin \alpha = \frac{9}{10}$$

$$10^2 - 9^2 = y^2 \rightarrow y = 1$$

$$10 + 9 + 1 + 1 + 10 = 31$$

$$\sin 45^\circ = \frac{BD}{AD} = \frac{\sqrt{r}}{r} = \frac{BD}{10} \rightarrow BD = \omega\sqrt{r} \quad A = 45^\circ$$

$$\tan 45^\circ = \frac{AB}{BD} = \frac{\sqrt{r}}{r} = \frac{AB}{\omega\sqrt{r}} \rightarrow AB = \omega$$

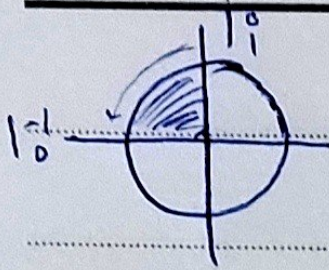
$$\cot 45^\circ = \frac{AB}{BC} = 1 \rightarrow BC = \omega$$

$$BD - BC = DC = \omega\sqrt{r} - \omega$$

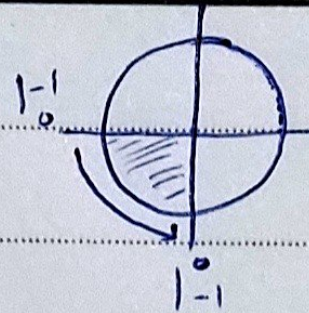
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$$\tan^2 \alpha + 1 = \frac{1}{\cos^2 \alpha} \rightarrow \frac{1}{9} + 1 = \frac{1}{\cos^2 \alpha} \rightarrow \frac{10}{9} = \frac{1}{\cos^2 \alpha}$$

$$\cos \alpha = \pm \frac{3}{\sqrt{10}} \rightarrow -\frac{3}{\sqrt{10}}$$

$$\tan = \frac{\sin}{\cos} = \frac{1}{3} = \frac{\sin}{-\frac{3}{\sqrt{10}}}$$

$$\sin = \frac{-1}{\sqrt{10}} \rightarrow \frac{\sqrt{10}}{10}$$