

$$\text{الف) } \frac{27}{180} = \frac{R_{\text{real}}}{\pi} = \frac{r}{r_0} \rightarrow R_{\text{real}} = \left[\frac{27\pi}{80} \right]$$

$$\text{ب) } 125 \times \frac{\pi}{180} = \left[\frac{125\pi}{36} \right]$$

$$\text{ج) } \frac{5\pi}{12} \times \frac{180}{\pi} = \left[75^\circ \right]$$

$$\text{د) } \frac{4\pi}{3} \times \frac{180}{\pi} = \left[240^\circ \right]$$

$$\begin{aligned} 1: 10a^\circ \\ 2: \frac{125\pi}{36} & \rightarrow \frac{D}{180} \rightarrow D = \frac{125 \times 180 \times a}{36 \times 10} \\ 3: \frac{a\pi}{\pi} & = \frac{D}{180} \rightarrow D = 180a \end{aligned} \left. \vphantom{\begin{aligned} 1: 10a^\circ \\ 2: \frac{125\pi}{36} \\ 3: \frac{a\pi}{\pi} \end{aligned}} \right\} \begin{aligned} \varepsilon_{\text{با}} &= 180 \\ a &= 1 \end{aligned}$$

$$\text{الف) } \left(\frac{1}{r} \times \frac{\sqrt{c}}{r} \right) - \left(\frac{\sqrt{c}}{r} \times \frac{1}{r} \right) - 1 + 2 = \left[1 \right]$$

$$\begin{aligned} \text{ب) } \frac{\left(\frac{\sqrt{c}}{r} \right)^2 + (1)^2 + (\sqrt{c})^2}{\sqrt{c} - \frac{\sqrt{c}}{r}} &= \frac{\frac{c}{r^2} + 1 + c}{\frac{r\sqrt{c} - \sqrt{c}}{r}} = \frac{\frac{12}{9} + 1 + 3}{\frac{2\sqrt{c}}{3}} = \frac{\frac{12}{3}}{\frac{2\sqrt{c}}{3}} = \frac{12}{2\sqrt{c}} \\ &= \left[\frac{12\sqrt{c}}{2} \right] \end{aligned}$$

$$\left(-\frac{1}{r} \times \frac{1}{r} \right) + \left(\frac{\sqrt{c}}{r} \times \frac{\sqrt{c}}{r} \right) = \sin^2 \theta$$

$$-\frac{1}{c} + \frac{c}{c} = \frac{r}{c} = \sin^2 \theta \rightarrow \sin \theta = \frac{\sqrt{r}}{\sqrt{c}}$$

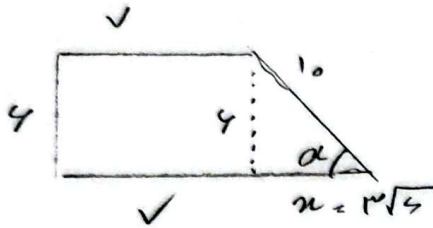
$$\xrightarrow[\varepsilon_{\text{با}}]{\text{از حالت اول}} \cos \theta = \frac{\sqrt{r}}{r} \rightarrow \left[\tan \theta = 1 \right]$$

$$\frac{r \times \frac{\sqrt{c}}{r} \times \left(1 - \frac{1}{r} \right)}{\left(1 - \frac{1}{c} \right)^2} = \frac{\frac{4\sqrt{3}}{9}}{\frac{4}{9}} = \sqrt{3} = \tan \theta$$

$$\rightarrow \left[\theta = \frac{\pi}{3} \right]$$

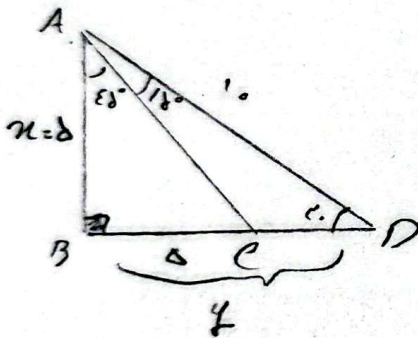
$$\sin \theta = 2 \cos \theta \rightarrow$$

$$\frac{r(-2\cos\theta) - \cos\theta}{2\cos\theta - 2\cos\theta} = \frac{12\cos\theta}{\cos\theta} = \boxed{12}$$



$$x = \frac{\text{نسبة}}{45^\circ} \quad x = 1$$

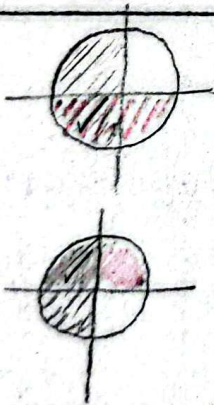
$$P: 4 + 4 + 4 + 10 + 1 = \boxed{24}$$



$$x = \cos 40^\circ \times 10 = \frac{1}{r} \times 10 = 8$$

$$y = \sin 40^\circ \times 10 = \frac{\sqrt{5}}{r} \times 10 = 5\sqrt{5}$$

$$|DC| = y - x = 5\sqrt{5} - 8 = \boxed{5(\sqrt{5} - 1)}$$



الربع الأول

الربع الأول $\uparrow \cos \theta$, $\downarrow \sin \theta$
الربع الثاني

الربع الثاني

الربع الثاني $\downarrow \cos \theta$, $\downarrow \sin \theta$
الربع الثالث

$$1 + \tan^2 x = \frac{1}{\cos^2 x} \rightarrow 1 + \frac{1}{9} = \frac{10}{9} = \frac{1}{\cos^2 x} \rightarrow \cos^2 x = \frac{9}{10} \xrightarrow{\text{الربع الثاني}} \cos x = \frac{3}{\sqrt{10}}$$

$$\cos x = \frac{-3}{\sqrt{10}} = \frac{-3\sqrt{10}}{10} \rightarrow \sin x = \cos x \frac{\sin x}{\cos x} = \frac{-3\sqrt{10}}{10} \times \frac{1}{\cos x} = \boxed{\frac{-\sqrt{10}}{10}}$$

$$\cos x = 0 \sin x \rightarrow 4 \sin^2 x + \sin^2 x = 10 \sin^2 x = 1 \rightarrow \sin^2 x = \frac{1}{10}$$

الربع الثاني

الربع الثاني

$$\sin x = \frac{-\sqrt{10}}{10}$$