

$$\text{الف) } r_{V_2} (\text{rad}) \quad \frac{r_V}{1\lambda_0} \cdot \frac{\lambda}{\pi} \Rightarrow \frac{r}{r_0} \cdot \frac{\lambda}{\pi} \Rightarrow \lambda \cdot \frac{r\pi}{r_0}$$

ج) $120 = (x) \text{ rad}$ $\frac{120}{180} = \frac{x}{\pi} \Rightarrow x = \frac{120\pi}{180}$

$$\frac{\frac{\Delta \pi}{1^\circ} \text{ rad} = (\pi)^\circ}{\frac{\Delta \pi}{1^\circ}} = \frac{\pi}{1^\circ} \Rightarrow \pi = 1^\circ$$

$$2) \frac{4\pi}{9} \text{ rad} = (x)^\circ$$

$$\ln a + \frac{1459}{9} G + \frac{a\pi}{\lambda} = 11.0$$

$$1 \circ a + 12 \circ a + 12 \circ a_2 \mid 10 \circ 2 \circ a \Rightarrow a_2 \in \underline{f}$$

$$\frac{\frac{q \times a}{r_1}}{\frac{1}{\lambda}} = \frac{D}{1\lambda} \Rightarrow D = r_1 \times a \quad \left| \quad \frac{\frac{q \pi}{\lambda}}{\frac{1}{2\lambda}} = \frac{D}{1\lambda} \Rightarrow D = r_2 \times a \right.$$

$$\text{Sol)} \frac{\cos 40^\circ \cos 70^\circ - \sin 40^\circ \sin 70^\circ}{\frac{1}{2} \times \frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2}} = \frac{-\tan 40^\circ + \cot 40^\circ}{-1} = \frac{1}{1}$$

$$v) \frac{\tan^2 r^\circ + \tan^2 40^\circ + \tan^2 4^\circ}{\cot^2 r^\circ - \cot^2 40^\circ} = \frac{\frac{1}{r} + 1 + r}{\sqrt{r} - \frac{1}{\sqrt{r}}} = \frac{\frac{1r}{r}}{\frac{r-1}{\sqrt{r}}} = \frac{1r\sqrt{r}}{r-1}$$

$$\frac{-\sin 30^\circ \cos 40^\circ}{-\frac{1}{2} \times \frac{1}{2} = -\frac{1}{4}} + \frac{\cos 30^\circ \sin 40^\circ}{\frac{\sqrt{3}}{2} \times \frac{\sqrt{2}}{2} = \frac{\sqrt{6}}{4}} = \sin \theta \Rightarrow \frac{r}{R} = \sin \theta \quad \tan \theta = ?$$

$$1 + \cot^2 \theta = \frac{1}{\sin^2 \theta} \Rightarrow 1 + \cot^2 \theta = \frac{1}{\sin^2 \theta} \Rightarrow \cot^2 \theta = \frac{1}{\sin^2 \theta} - 1 \Rightarrow \tan^2 \theta = \frac{1}{1 - \sin^2 \theta} = \frac{1}{\cos^2 \theta} \Rightarrow \tan \theta = \pm \frac{1}{\cos \theta}$$

$$\frac{\frac{r}{\sqrt{r}} (1 - \frac{1}{r})}{(1 - \frac{1}{r})^r} \Rightarrow \frac{\cancel{r}}{\sqrt{r}} \cdot \frac{1}{r}$$

$\theta = ? \text{ Rad}$

$$\tan \theta = \frac{r}{\sqrt{r}} \begin{cases} \phi_0^\circ \checkmark \\ \psi_0^\circ \times \end{cases} \Rightarrow r \frac{\phi_0}{1 \Delta_0^2} \frac{\pi}{\pi} \Rightarrow \underline{x = \frac{\pi}{r}}$$

$$\frac{v_s \sin \theta - \cos \theta}{\sin \theta - f \cos \theta} = \frac{\frac{10}{\sqrt{4}} - \frac{1}{\sqrt{4}}}{\frac{0}{\sqrt{4}} - \frac{f}{\sqrt{4}}} = \frac{1f - 1K}{1} = \frac{-10}{\frac{0}{\sqrt{4}} - \frac{-f}{\sqrt{4}}} = \frac{-1f}{-1} = 1K$$

$\tan \theta = 0$ (4)
 $\sin \theta = \pm \frac{1}{\sqrt{4}}$
 $\cos \theta = \pm \frac{1}{\sqrt{4}}$



مسألة ٢: $9 + 7 + 7 + 1 + 10 = 34$

$$1 \dots 2 \cdot 4^r + 2^r \Rightarrow 2^r \cdot 4^r$$

$$2 = 1$$

$$\begin{aligned} \sin 40^\circ &= \frac{BD}{10} \Rightarrow BD = \frac{10 \sin 40^\circ}{1} = 6.43 \text{ m} \\ \sin 70^\circ &= \frac{AB}{10} \Rightarrow AB = \frac{10 \sin 70^\circ}{1} = 9.397 \text{ m} \\ CD &= BD - BC = 6.43 - 9.397 = -2.967 \text{ m} \end{aligned}$$

9. $\overline{DC}$ d's b (1)

$$\tan \alpha = \frac{1}{r}$$

$\sinh x = ?$

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

$\sin x \rightarrow \begin{cases} +\frac{1}{\sqrt{10}} \text{ ✗} \\ -\frac{1}{\sqrt{10}} \text{ ✓} \end{cases} \Rightarrow \begin{matrix} \text{مورد اولیٰ صحیح است} \\ \text{مورد دومیٰ اشتباه است} \end{matrix}$