

۲. افزون حیدر قوب نوشتی ۱۱

$$\text{الف) } \frac{V}{V_0} = \frac{R}{\pi} \rightarrow \frac{V \pi}{V_0} = \frac{R \pi}{\pi}$$

$$2) \frac{r_K}{q} = \frac{D}{1A} \rightarrow \frac{r_K}{q} \times \frac{1}{A} \times \frac{1}{K} = \frac{1}{A \cdot K}$$

$$\text{b) } \frac{140}{1\lambda_0} = \frac{R}{\pi} \rightarrow \frac{140\pi}{1\lambda_0} = \frac{140\pi}{14}$$

$$2.) \frac{\frac{\partial \pi}{\partial Y}}{\frac{\partial \pi}{\partial X}} = \frac{0}{1/N_0} \rightarrow \frac{\frac{\partial \pi}{\partial Y} \times 1/N_0}{1} \cdot \cancel{N_0} \times \frac{1}{X} = \boxed{V \omega^0}$$

$$\frac{17\Delta a}{9} = \frac{D}{1A}$$

$$44,2a + 14,2a + 10a = 110^\circ$$

$$68,4a = 110^\circ$$

$$\frac{\frac{a\pi}{\Lambda}}{\pi} = \frac{D}{1\lambda_0} \quad \frac{a\pi}{\Lambda} \times \frac{1}{f_y} \times \frac{1}{\pi} = \frac{f_D}{r} a = 44, \Delta a$$

$$a = f$$

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

$$\tan 45^\circ = \frac{1}{r} \times \frac{r}{\sqrt{r}} = \frac{1}{\sqrt{r}} \rightarrow \frac{1}{\mu}$$

$$\frac{\sqrt{r}}{r} \times \frac{r}{1} = \sqrt{r} \xrightarrow{\text{rationalize}} r$$

$$\frac{\cos \theta}{\sin \theta} = \frac{\frac{\sqrt{r}}{r}}{\frac{1}{r}} = \frac{\sqrt{r}}{r} \times \frac{r}{1} = \sqrt{r}$$

$$\frac{\cos 40^\circ}{\sin 40^\circ} = \frac{1}{r} \times \frac{r}{\sqrt{\mu}} = \frac{1}{\sqrt{\mu}}$$

$$b) \frac{\frac{1}{x} + 1 + x}{\frac{1}{\sqrt{x}} - \frac{1}{x}} = \frac{\frac{1}{x} + \frac{x}{x} + \frac{x^2}{x}}{\frac{1}{\sqrt{x}} - \frac{1}{x}} = \frac{\frac{1}{x} \cdot x \cdot \frac{\sqrt{x}}{\sqrt{x}}}{\frac{1}{\sqrt{x}} - \frac{1}{x}} \quad \frac{x\sqrt{x}}{x}$$

$$\sin 30^\circ = \frac{1}{2}$$

$$\sin 4.0^\circ = \frac{\sqrt{4}}{r}$$

$$\cos \theta_0 = \frac{1}{\sqrt{\mu}}$$

$$\cos 40^\circ = \frac{1}{r}$$

$$-\frac{1}{r} \times \frac{1}{r} + \frac{\sqrt{r}}{r} \times \frac{\sqrt{r}}{r}$$

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

$$\cos^2 \theta + \sin^2 \theta = 1$$

$$\cos^2 \theta = 1 - \frac{1}{\gamma} = \frac{1}{\gamma}$$

$$1 + \tan^2 \theta = \gamma$$

$$\tan^2 \theta = 1$$

$$1 + \tan^2 \theta = \frac{1}{\frac{1}{\gamma}}$$

$$\tan \theta = 1$$

$$\tan 45^\circ = \frac{\sin 45^\circ}{\cos 45^\circ} \rightarrow \frac{1}{1} \times \frac{1}{\sqrt{\mu}} = \frac{1}{\sqrt{\mu}}$$

$$\gamma \left(\frac{1}{\sqrt{\mu}} \right) \left(1 - \frac{1}{\mu} \right)$$

$$\frac{\frac{f}{\sqrt{y}}}{\sqrt{y}} = \frac{y_0}{1\lambda_0} \cdot \frac{R}{\pi} \rightarrow \frac{y_0 \pi}{1\lambda_0} = \frac{\pi}{\sqrt{y}}$$

$$\cot 4^\circ = \frac{\cos 4^\circ}{\sin 4^\circ} = \frac{1}{Y} \times \frac{Y}{\sqrt{Y^2}}$$

$$\left(1 - \frac{1}{r}\right)^r$$

$$\frac{\frac{F}{\sqrt{1-\beta^2}}}{\frac{r}{\sqrt{1-\beta^2}}} \times \frac{1}{\mu} = \frac{F}{r} \times \frac{1}{\mu}$$

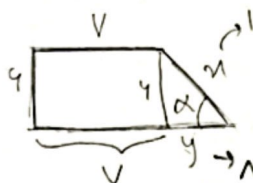
$$\frac{F}{r} = \frac{K}{a}$$

$$\frac{\cancel{\mu}}{\cancel{\mu}\sqrt{\mu}} \times \frac{\cancel{\mu}}{\cancel{\mu}} \times \frac{\mu}{\sqrt{\mu}} \times \frac{\sqrt{\mu}}{\sqrt{\mu}} = \frac{\mu\sqrt{\mu}}{\mu}$$

$$\tan \theta = \frac{1}{2} \rightarrow 1 + \tan^2 \theta = \frac{1}{\cos^2 \theta} \rightarrow \cos^2 \theta = \frac{1}{1 + \frac{1}{4}} \rightarrow \cos \theta = \frac{1}{\sqrt{5}} \rightarrow \cos^2 \theta + \sin^2 \theta = 1$$

$$\sin^2 \theta = 1 - \frac{1}{5} = \frac{4}{5} \rightarrow \sin \theta = \frac{2}{\sqrt{5}} \leftarrow \sin^2 \theta = \frac{4}{5}$$

$$\frac{\left(\frac{1}{\sqrt{5}} \right) - \frac{1}{\sqrt{5}}}{\frac{1}{\sqrt{5}} - \frac{1}{\sqrt{5}}} = \frac{\frac{1}{\sqrt{5}} \times \frac{\sqrt{5}}{1}}{\frac{1}{\sqrt{5}} \times \frac{\sqrt{5}}{1}} = 1 \quad \checkmark$$

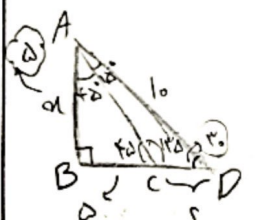


$$\sin \alpha = \frac{4}{5} = \frac{4}{10} \rightarrow m = 10$$

$$\cos \alpha = \frac{3}{5} = \frac{6}{10}$$

$$4 + 3 + 10 + 3 + 10 = 30$$

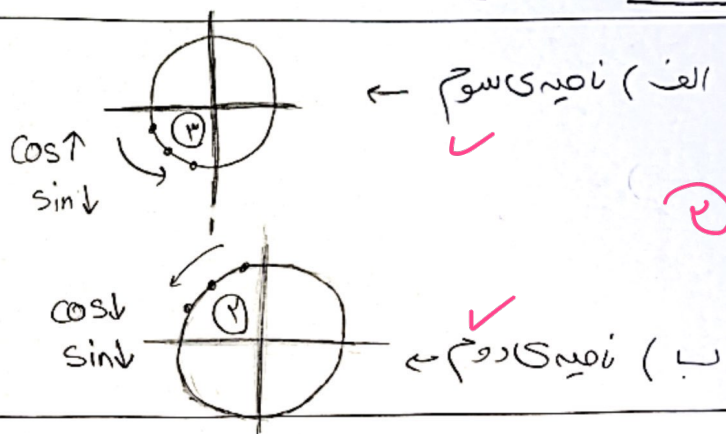
$$\cos^2 \alpha + \sin^2 \alpha = 1 \rightarrow \frac{9}{100} + \frac{16}{100} = 1 \rightarrow \frac{25}{100} = \frac{1}{4} \rightarrow 25 = 100$$



$$\frac{x}{10} = \sin \theta \rightarrow \frac{1}{2} = \frac{x}{10} \rightarrow x = 5$$

$$BD^2 = 10^2 - 4.5^2 \rightarrow BD = \sqrt{100 - 20.25} = \sqrt{79.75} \rightarrow BD - BC = CD$$

$$x + BD = 10$$



$$\tan \alpha = \frac{1}{4} \rightarrow \sin \alpha = \frac{1}{\sqrt{17}} \rightarrow \cos \alpha = \frac{4}{\sqrt{17}}$$

$$1 + \cot^2 \alpha = \frac{1}{\sin^2 \alpha} \rightarrow 1 + 16 = \frac{1}{\sin^2 \alpha} \rightarrow \sin^2 \alpha = \frac{1}{17} \rightarrow \sin \alpha = \pm \frac{1}{\sqrt{17}}$$

$$\rightarrow \sin \alpha = -\frac{1}{\sqrt{17}}$$