

نام و نام خانوادگی: ..... پاسخنامه تشریحی تکلیف شماره ۱۴ کلاس: ..... دبیر: ..... ۱۴۰۲

الف)  $\frac{D^{2V}}{110} = \frac{Rad}{Tc} \rightarrow Rad = \frac{5\pi}{29}$

ب)  $\frac{D^{120}}{110} = \frac{Rad}{Tc} \rightarrow Rad = \frac{40\pi}{35}$

ج)  $\frac{D}{110} = \frac{Rad}{Tc} \rightarrow D = 78^\circ$

د)  $\frac{D}{110} = \frac{Rad}{Tc} \rightarrow D = 1.^\circ$

$D = 1.^\circ \alpha$

$\frac{120\alpha}{200} = \frac{D}{110} \rightarrow D = 12/20^\circ \alpha$

$\frac{5\pi}{11} \frac{Rad}{Tc} = \frac{D}{110} \rightarrow D = 22/20^\circ \alpha$

$10\alpha + 12/20\alpha + 22/20\alpha = 110$

$20\alpha = 110$

$\alpha = 5$

الف)  $(\frac{1}{5} + \frac{1}{5}) - (\frac{\sqrt{3}}{5} \times \frac{\sqrt{3}}{5}) = \frac{1}{5} + \frac{1}{5} - \frac{3}{5} = \frac{1}{5}$

ب)  $\frac{\frac{1}{5} + 1}{\frac{\sqrt{3}}{5} + \frac{\sqrt{3}}{5}} = \frac{\frac{1+5}{5}}{\frac{2\sqrt{3}}{5}} = \frac{6}{2\sqrt{3}} = \frac{3}{\sqrt{3}} = \sqrt{3}$

$(\frac{1}{5} \times \frac{1}{5}) + (\frac{\sqrt{3}}{5} \times \frac{\sqrt{3}}{5}) = \frac{1}{5} + \frac{3}{5} = \frac{4}{5} = \frac{1}{5} = \sin^2 \theta$

$\sin \theta = \frac{2}{5} \frac{\sqrt{3}}{5} \rightarrow \sin \theta = \frac{\sqrt{3}}{5}, \cos \theta = \frac{4}{5}$

$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\frac{\sqrt{3}}{5}}{\frac{4}{5}} = \frac{\sqrt{3}}{4}$

$\frac{2\sqrt{3}}{5} (1) + \tan \theta = \frac{\sin \theta}{\cos \theta} \rightarrow \sin \theta + \cos \theta = 1$

$\sin \theta = \frac{2\sqrt{3}}{5} \cos \theta$

$\frac{12}{5} \cos \theta + \cos \theta = 1$

$\frac{17}{5} \cos \theta = 1 \rightarrow \cos \theta = \frac{5}{17} \rightarrow \cos \theta = \frac{5}{17}$

$\sin \theta = \frac{2\sqrt{3}}{5} \times \frac{5}{17} = \frac{2\sqrt{3}}{17}$

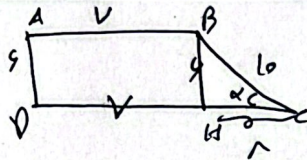
$$\tan \theta = 2$$

$$\frac{\sin \theta}{\cos \theta} = 2$$

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

$$\frac{w \sin \theta - e \cos \theta}{\sin \theta - \cos \theta} = \frac{w(2 \cos \theta) - e \cos \theta}{2 \cos \theta - \cos \theta}$$

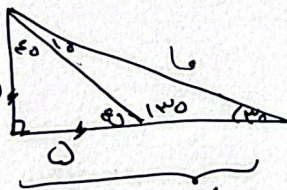
$$\frac{12 \cos \theta - 8 \cos \theta}{\cos \theta} = \frac{1^2 \cos \theta}{\cos \theta} = 1^2$$



$$\sin \alpha = \frac{AB}{AC} \rightarrow \frac{3}{5} \rightarrow \frac{4}{5} \rightarrow BC = 4$$

$$AC^2 = AB^2 + BC^2 \rightarrow 5^2 = 3^2 + BC^2 \rightarrow BC = 4$$

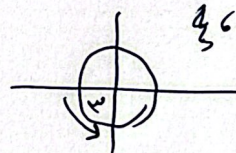
$$L_2 = 3 + 4 + 3 + 4 + 3 = 17$$



$$DC = 2\sqrt{3} - 2$$

$$BD = \frac{\sqrt{3}}{2} \times 2 = \sqrt{3}$$

$$\theta \uparrow \rightarrow \begin{cases} \sin \downarrow \\ \cos \uparrow \end{cases}$$



$$\theta \uparrow \rightarrow \begin{cases} \sin \downarrow \\ \cos \downarrow \end{cases}$$



$$\tan x = \frac{\sin x}{\cos x} = \frac{1}{2} \rightarrow \cos x = 2 \sin x$$

$$\begin{cases} \sin = \\ \cos = \end{cases}$$

$$\begin{aligned} \sin^2 x + \cos^2 x &= 1 \\ \sin^2 x + 4 \sin^2 x &= 1 \\ 5 \sin^2 x &= 1 \\ \sin^2 x &= \frac{1}{5} \\ \sin x &= \frac{1}{\sqrt{5}} \end{aligned}$$

$$\sin x = \frac{1}{\sqrt{5}} \rightarrow \sin x = \frac{\sqrt{5}}{5}$$