

الف $27^\circ = \pi \text{ rad}$ $\frac{27^\circ}{180} = \frac{\pi \text{ rad}}{K} \Rightarrow \pi \text{ rad} = \frac{27\pi K}{180} = \frac{3\pi}{20}$

ب $14^\circ = \pi \text{ rad}$ $14^\circ \times \frac{\pi}{180} = \frac{14\pi K}{180}$

ج $\frac{9K}{14} \text{ rad} (9^\circ)$ $\frac{9K}{14} \times \frac{\pi}{180} = \frac{9\pi}{140} = \frac{9}{140} = \frac{D}{180} \Rightarrow D = 14^\circ$

د $\frac{5K}{9} \text{ rad} (9^\circ)$ $\frac{5K}{9} \times \frac{\pi}{180} = \frac{5\pi}{162} = \frac{5}{162} = \frac{D}{180} \Rightarrow D = 10^\circ$

$\frac{9K}{14} \text{ rad} = \frac{5\pi}{162}$

$\frac{14\pi}{9} \text{ rad} = \frac{5\pi}{162}$

$10^\circ \text{ rad} = \frac{5\pi}{162}$

$\frac{5\pi}{162} + \frac{14\pi}{9} + \frac{5\pi}{162} = 180^\circ \Rightarrow \frac{90\pi}{162} = 180^\circ \Rightarrow \pi = 180^\circ$

الف $\cos 4^\circ$, $\sin 4^\circ$, $\tan 4^\circ$, $\cot 4^\circ$, $\sec 4^\circ$, $\csc 4^\circ$, $\theta = 4^\circ$

ب $\frac{\tan^2 4^\circ + \tan^2 2^\circ + \tan^2 4^\circ}{\cot^2 4^\circ - \cot^2 4^\circ} = \frac{12\sqrt{3}}{4}$

$\sin^2 \theta = \sin^2 4^\circ$

$\Rightarrow -\frac{1}{2} + \frac{\sqrt{3}}{2} = \sin^2 \theta \Rightarrow \sin^2 \theta = \frac{1}{2} \Rightarrow 1 + \cot^2 \theta = \frac{1}{\sin^2 \theta} \Rightarrow \cot^2 \theta = 1 \Rightarrow \cot \theta = 1$

$\Rightarrow \cot \theta = 1 \Rightarrow \frac{1}{\tan \theta} = 1 \Rightarrow \tan \theta = 1$

$\frac{4 \tan 4^\circ (1 - \tan^2 4^\circ)}{(1 - \cot^2 4^\circ)^2} = \tan \theta$

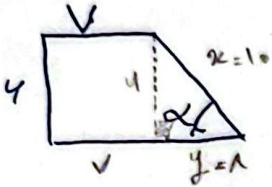
$\frac{4 \sqrt{3}}{2} (1 - \frac{1}{2}) = \frac{2 \sqrt{3}}{2} = \sqrt{3} = \tan \theta \Rightarrow \theta = 4^\circ = \frac{\pi}{2}$

$$\frac{4 \sin \theta - \cos \theta}{\sin \theta - \cos \theta} = 9$$

$$\tan \theta = a \Rightarrow 1 + \tan^2 = \frac{1}{\cos^2} \Rightarrow \cos = \frac{1}{\sqrt{1+a^2}}$$

$$\cos \epsilon = \frac{1}{\omega} \Rightarrow 1 + \cos \epsilon = \frac{1}{\sin \epsilon} \Rightarrow \sin \epsilon = \frac{\omega}{\sqrt{1+\omega^2}}$$

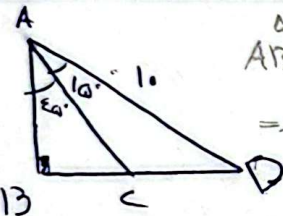
$$\Rightarrow \frac{10 \times \frac{9}{\sqrt{14}} - \frac{1}{\sqrt{14}}}{\frac{9}{\sqrt{14}} - \frac{1}{\sqrt{14}}} = \frac{\frac{12}{\sqrt{14}}}{\frac{8}{\sqrt{14}}} = 1.5$$



$$\sin \alpha = \frac{4}{10} = \frac{4}{x} \Rightarrow x = 10$$

$$100 = 4y + y^2 \Rightarrow y^2 = 4k \Rightarrow y = 2$$

$$\Rightarrow P = 4 + 10 + V + V + 1 = 20$$



$$\Delta ABD \text{ 中 } \sin 40^\circ = \frac{BD}{AB} = \frac{BD}{10} \Rightarrow BD = 6.4 \Rightarrow AB_2$$

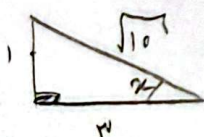
$$\Rightarrow 100 = v_0 + A B^Y \Rightarrow A B = 0$$

$$\Delta ABC \text{ دایره } = \angle a \text{ و } \angle \omega = 1 = \frac{BC}{a} \Rightarrow BC = a$$

$$\Rightarrow DC = a\sqrt{2} - a = a(\sqrt{2} - 1)$$

الفاء در نامه اول مقدار سیفوس با افزایش زاویه جیبی و کمینوس افزایشی است = نامه اول

ب. در این عدد هم اندازۀ سیفوس (یا افزاریان) را عددی باریک و در سیفوس منتهی به نزدیکی عدد مقدار آن کم می شود و اندازۀ سیفوس هم کم می شود و چون سیفوس است مقدار آن هم کم می شود و نه سیفوس دیگر



① $\mathcal{O}_S$: $\frac{1}{t_n n} = \mathcal{O}(t_n), \mathcal{O}(t_n) = \mu$

$$1 + \cot^2 x = \frac{1}{\sin^2 x} \Rightarrow \frac{1}{\sin^2 x} = 10$$

$$\Rightarrow \sin x = -\frac{1}{\sqrt{10}}$$

$$\Rightarrow \sin \alpha = \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$

$\frac{10}{10} = \frac{10}{10}$