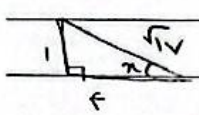


$$\text{و) } \tan\left(\frac{\pi}{5} + \frac{3\pi}{5}\right) + \sin\left(\frac{15\pi}{5} + \frac{3\pi}{5}\right) + \cos\left(\frac{15\pi}{5} + \frac{\pi}{5}\right) = -1 + \frac{\sqrt{5}}{5} \times \frac{\sqrt{5}}{5} = \left(-\frac{1}{5}\right)$$

$$\text{ب) } \tan\left(\frac{15\pi}{4} + \frac{9\pi}{4}\right) + \sin\left(\frac{9\pi}{4} + \frac{4\pi}{4}\right) + \cos\left(\frac{9\pi}{4} + \frac{\pi}{4}\right) = -\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} + \frac{1}{2} = 0$$



cot alpha

$$\frac{r \cos \alpha - \sin \alpha}{\cos \alpha + \sin \alpha}, \quad r\left(\frac{f}{\sqrt{14}} - \frac{1}{\sqrt{14}}\right), \quad \frac{\frac{11}{\sqrt{14}}}{\frac{4}{\sqrt{14}}} = \left(\frac{11}{4}\right)$$

$$\cos \alpha = \frac{f}{\sqrt{14}}, \quad \sin \alpha = \frac{1}{\sqrt{14}}$$

$$\sin \alpha = r \cos \alpha, \quad \sin^2 + \cos^2 = 1 \quad (r \cos \alpha)^2 + \cos^2 \alpha = 1 \quad \cos^2 \alpha = 1 - \cos^2 \alpha \rightarrow \cos \alpha = \pm \frac{\sqrt{14}}{14}$$

چون نامبر سمت چپ قبل از است

$$\text{و) } \cos\left(\frac{11\pi}{5} + \alpha\right) = \cos\left(\frac{7\pi}{5} + \frac{3\pi}{5} + \alpha\right) = \cos\left(\frac{10\pi}{5} + \alpha\right) = \cos \frac{7\pi}{5} \cos \alpha$$

$$= \sin \frac{7\pi}{5} = \sin \alpha = \cos^2 \alpha = 1 - \sin^2 \alpha = 1 - \left(\frac{\sqrt{2}}{10}\right)^2 = \frac{91}{100} \rightarrow \cos \alpha = \pm \frac{\sqrt{10}}{10}$$

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$$\left(-\frac{\sqrt{2}}{10}\right) \left(-\frac{\sqrt{10}}{10}\right) = \left(\frac{\sqrt{2}}{10}\right) \left(\frac{\sqrt{10}}{10}\right) = \frac{14}{100} = \frac{7}{50} = \frac{\pi}{10} = \left(\frac{2\pi}{10}\right)$$

$$\text{ب) } \sin\left(\frac{15\pi}{4} + \alpha\right) = \sin\left(\frac{11\pi}{4} + \frac{4\pi}{4} + \alpha\right) = \sin\left(\frac{15\pi}{4} + \alpha\right) = \left(-\frac{\sqrt{2}}{2}\right) \cos \alpha = \frac{-14}{20} = \frac{-7}{10} = \left(-\frac{7}{10}\right)$$

$$\tan^2 + 1 = \frac{1}{\cos^2} \rightarrow \left(\frac{1}{\sqrt{2}}\right)^2 + 1 = \frac{1}{\cos^2} \rightarrow \cos^2 = \frac{2}{3} \rightarrow \cos = \pm \frac{\sqrt{6}}{3}$$

نامبر

$$\sin^2 = 1 - \cos^2 = 1 - \left(\frac{\sqrt{6}}{3}\right)^2 = \frac{1}{3} \rightarrow \sin = \pm \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

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$$r \sin^2 \alpha + \cos^2 \alpha = \frac{f}{r} \rightarrow r(1 - \cos^2 \alpha) + \cos^2 \alpha = \frac{f}{r} \rightarrow \cos^2 \alpha = \frac{f}{r} \rightarrow \sin^2 = 1 - \frac{f}{r} = \frac{1}{r} \rightarrow \tan^2 = \frac{\sin^2}{\cos^2} = \frac{\frac{1}{r}}{\frac{f}{r}} = \left(\frac{1}{f}\right)$$

$$\frac{S}{ABC} = \frac{1}{r} \times \sqrt{r} \times 4 \times \sin \alpha = \frac{f}{r} \rightarrow \sin \alpha = \frac{\sqrt{f}}{r} \quad 0 < \alpha < \pi$$

$$\alpha \begin{cases} \text{① } 40 \leq \frac{\pi}{4} \\ \text{② } 140 \leq \frac{3\pi}{4} \end{cases} \rightarrow \frac{120}{4} = \frac{3\pi}{4} = \left(\frac{3\pi}{4}\right)$$

$$a \in \mathbb{R}_n \quad b \in \mathbb{R}_n \quad \text{Se } ab \sin \alpha = (r_n)(r_n) \sin \alpha$$

$$\frac{\delta}{ADE} = \frac{1}{r} \times V \times f \times \sin \hat{A} = 1 f \sin \hat{A}$$

$$(\overline{A}M + \overline{M}B)(\overline{B}N + \overline{N}C) \geq r(\overline{B}M \times \overline{B}N) \rightarrow (\overline{A}M + \overline{M}B) \times \underline{r} \overline{B}N \geq r \overline{B}M \times \overline{B}N$$

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$$\textcircled{1} \frac{1}{\sqrt{1+\sin x}} - \tan x = \frac{1+\sin x}{| \cos x |} \rightarrow -\tan x \leq \frac{1+\sin x-1}{| \cos x |} = \frac{\sin x}{| \cos x |} = \tan x$$

$$\text{Q5b} \rightarrow \frac{-\sin x}{\cos x} \times \frac{\sin x}{(\cos x)} \times \frac{1}{\sin x} - 1 \times \frac{1}{(\cos x)} \rightarrow \cos x = -|\cos x|$$

$$\cos x < 0$$

⑦ $\frac{-\sin x}{\cos x} \cdot \frac{|\sin x|}{\cos x} \rightarrow -\sin x \cdot |\sin x| \rightarrow \sin x$



Parsian