

$$\tan \frac{11\pi}{5} = \tan 420^\circ = \tan 60^\circ$$

$$\text{ا.ب) } \sin \frac{10\pi}{5} = \sin 40^\circ = \sin 140^\circ$$

$$\cos \frac{13\pi}{5} = \cos 516^\circ = \cos 216^\circ$$



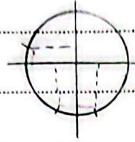
$$\rightarrow -1 + \left(-\frac{\sqrt{3}}{4} \times \left(-\frac{\sqrt{3}}{4}\right)\right) = -\frac{1}{4}$$

$$\frac{r}{4} = \frac{1}{4}$$

$$\tan \frac{14\pi}{5} = \tan \frac{9\pi}{5} = \tan 180^\circ$$

$$\text{ب) } \sin \frac{11\pi}{5} = \sin \frac{2\pi}{5} = \sin 72^\circ$$

$$\cos \frac{10\pi}{5} = \cos \frac{4\pi}{5} = \cos 144^\circ$$



$$\left(-\frac{\sqrt{3}}{4} \times \frac{\sqrt{3}}{4}\right) - \frac{1}{4} = 0$$

$$\frac{r}{4} = \frac{1}{4}$$

تقسیم ۲

$$\frac{\frac{r \cos}{\sin} - \frac{\sin}{\sin}}{\frac{\cos}{\sin} + \frac{\sin}{\sin}} = \frac{r \cos - 1}{\cos + 1} = \frac{12 - 1}{2} = \frac{11}{2}$$

$$\sin \alpha = r \cos \alpha$$



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

$$r^2 \cos^2 \alpha + \cos^2 \alpha = 1 \rightarrow \cos^2 \alpha = 1$$

$$\cos^2 \alpha = \frac{1}{4} \rightarrow \cos \alpha = \frac{1}{2} = \frac{\sqrt{3}}{2}$$

$$\sin \alpha = \frac{\sqrt{3}}{10}$$

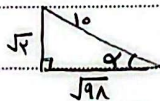
$$\cos \left(\frac{11\pi}{5} + \alpha\right) = \cos \left(\frac{13\pi}{5} + \alpha\right) \rightarrow$$

(ج.ا)

$$\rightarrow \left(\cos \frac{13\pi}{5} \times \cos \alpha\right) - \left(\sin \frac{13\pi}{5} \times \sin \alpha\right) = \left(-\frac{\sqrt{3}}{4} \times \frac{\sqrt{3}}{10}\right) + \left(\frac{\sqrt{3}}{4} \times \frac{\sqrt{3}}{10}\right) = \frac{-\sqrt{3}}{20} + \frac{\sqrt{3}}{20} = 0$$

$$\frac{r-1}{2} = \frac{-0.5}{2}$$

$$\sin \alpha = \frac{\sqrt{3}}{10}$$



$$\cos \alpha = \frac{\sqrt{91}}{10}$$

$$\tan \alpha = \frac{1}{\sqrt{3}}$$

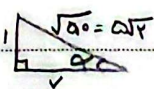
$$\sin \left(\frac{2\pi}{5} + \alpha\right) \rightarrow$$

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$$\rightarrow \left(\sin \frac{2\pi}{5} \times \cos \alpha\right) + \left(\sin \alpha \times \cos \frac{2\pi}{5}\right) = \left(\frac{-\sqrt{3}}{4} \times \frac{\sqrt{91}}{10}\right) + \left(\frac{\sqrt{3}}{10} \times \frac{\sqrt{3}}{4}\right) = \frac{-\sqrt{3}}{40} + \frac{\sqrt{3}}{40} = \frac{-\sqrt{3}}{40}$$

$$\frac{-0.1}{40}$$

$$\tan \alpha = \frac{1}{\sqrt{3}}$$



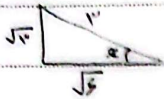
$$\sin \alpha = \frac{1}{10} = \frac{\sqrt{1}}{10}$$

Arman

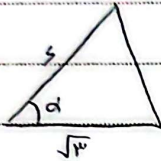
$$r \sin^2 \alpha + \cos^2 \alpha = \frac{15}{10} \rightarrow r \sin^2 \alpha + 1 - \sin^2 \alpha = \frac{15}{10}$$

$$\sin^2 \alpha = \frac{15}{10} - \frac{1}{10} = \frac{1}{10}$$

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



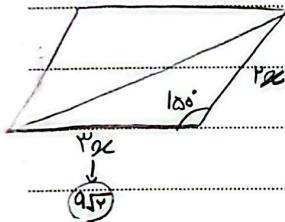
$$\tan \alpha = \frac{\sqrt{10}}{\sqrt{5}} \rightarrow \tan \alpha = \frac{\sqrt{2}}{1} = \sqrt{2}$$



$$\frac{1}{3} \times 3 \times \sqrt{10} \times \sin \alpha = 1/10$$

$$\sin \alpha = \frac{1/10}{\sqrt{10}} = \frac{1}{10\sqrt{10}} = \frac{\sqrt{10}}{100} = \frac{1}{10\sqrt{10}} \rightarrow 10^\circ, 80^\circ$$

$$\frac{10}{80} = 2$$



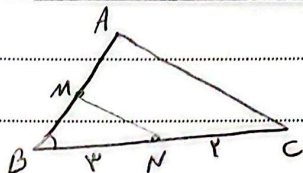
$$r \times r \times \sin 100^\circ = 100$$

$$r^2 = 100 \rightarrow r = 10$$

$$P = (5\sqrt{10} \times 10) + (9\sqrt{10} \times 10) = 140\sqrt{10}$$

$$\alpha \times v \times \frac{1}{v} \times \sin \hat{A} = r \times v \times \frac{1}{v} \times \sin \hat{A} = \frac{r}{v} \sin \hat{A} = \frac{r}{v} \sin \hat{A} = \frac{r}{v} \sin \hat{A} \quad (1)$$

$$\frac{r}{v} \sin \hat{A} = 1/v \rightarrow \sin \hat{A} = \frac{1}{v} \quad \text{and} \quad \cos \hat{A} = \frac{\sqrt{10}}{v} \quad \tan \hat{A} = \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$



$$\frac{BN}{NC} = \frac{r}{v}$$

$$\frac{\alpha \times AB \times \sin \hat{B} \times \frac{1}{v}}{r \times BM \times \sin \hat{B} \times \frac{1}{v}} = \frac{r}{v}$$

$$\alpha \times AB = r \times BM$$

$$\alpha \times AM + \alpha \times MB = r \times BM \rightarrow \alpha \times AM = r \times MB \rightarrow \frac{BM}{AM} = \frac{\alpha}{r}$$

$$\frac{1}{\cos \alpha} = \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{\cos \alpha} \rightarrow \sin \alpha = \cos \alpha \quad \left\{ \begin{array}{l} \frac{1}{\cos \alpha} = -\sin \alpha \\ \cos \alpha = -1 \end{array} \right.$$

$$\cos \alpha = -1$$

$$\sin \alpha = 0$$

Aman