

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

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

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



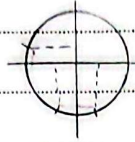
$$\rightarrow -1 + \left(-\frac{\sqrt{3}}{2} \times \left(-\frac{\sqrt{3}}{2} \right) \right) = -\frac{1}{4}$$

$$\frac{2}{4} = \frac{1}{2}$$

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

$$\text{ب) } \sin \frac{11\pi}{5} = \sin \frac{9\pi}{5} = \sin 180^\circ$$

$$\cos \frac{10\pi}{5} = \cos \frac{9\pi}{5} = \cos 180^\circ$$



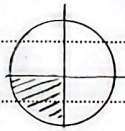
$$\left(-\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} \right) - \frac{1}{2} = 0$$

$$\frac{3}{2} = \frac{1}{2}$$

تقسيم 2

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

$$\sin \alpha = 2 \cos \alpha$$



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

$$2\cos^2 \alpha + \cos^2 \alpha = 1 \rightarrow 3\cos^2 \alpha = 1$$

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

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

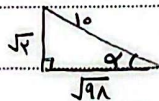
$$\cos \left(\frac{11\pi}{5} + \alpha \right) = \cos \left(\frac{13\pi}{5} + \alpha \right) \rightarrow$$

$$\text{الف) } \text{ (C) } \text{ (1)}$$

$$\rightarrow \left(\cos \frac{13\pi}{5} \times \cos \alpha \right) - \left(\sin \frac{13\pi}{5} \times \sin \alpha \right) = \left(-\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{10} \right) + \left(\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{10} \right) = \frac{-\sqrt{3}}{20} + \frac{\sqrt{3}}{20} = 0$$

$$\frac{\sqrt{3}-\sqrt{3}}{20} = \frac{0}{20} = 0$$

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



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

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

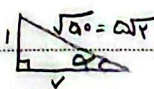
$$\sin \left(\frac{9\pi}{5} + \alpha \right) \rightarrow$$

$$\text{ب) } \text{ (C) } \text{ (1)}$$

$$\rightarrow \left(\sin \frac{9\pi}{5} \times \cos \alpha \right) + \left(\sin \alpha \times \cos \frac{9\pi}{5} \right) = \left(-\frac{\sqrt{3}}{2} \times \frac{\sqrt{91}}{10} \right) + \left(\frac{\sqrt{3}}{10} \times -\frac{\sqrt{3}}{2} \right) = \frac{-\sqrt{3}}{20} - \frac{\sqrt{3}}{20} = \frac{-2\sqrt{3}}{20} = \frac{-\sqrt{3}}{10}$$

$$\frac{-\sqrt{3}-\sqrt{3}}{20} = \frac{-2\sqrt{3}}{20} = \frac{-\sqrt{3}}{10}$$

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



$$\sin \alpha = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

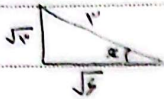
Arman

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

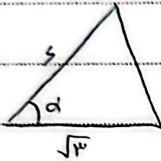
(a)

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

$$\sin \alpha = \frac{\sqrt{r}}{r}$$



$$\tan \alpha = \frac{\sqrt{r}}{\sqrt{r}} \rightarrow \tan \alpha = \frac{r}{r} = \frac{1}{r}$$

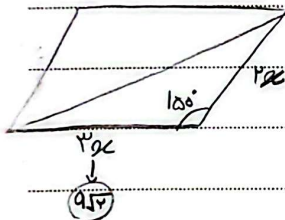


$$\frac{1}{r} \times r \times \sqrt{r} \times \sin \alpha = r/a$$

(c)

$$\sin \alpha = \frac{r/a \times r}{\frac{1}{r} \times \sqrt{r}} = \frac{r}{\sqrt{r}} = \frac{\sqrt{r}}{r} = \frac{1}{r} \rightarrow 1/r, 50\%$$

$$\frac{1/r}{50} = 2$$



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

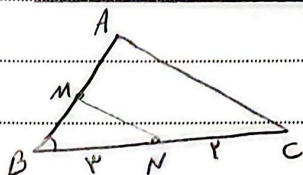
(v)

$$r^2 = 100 \rightarrow r = 10 \rightarrow r = 10\sqrt{2}$$

$$P = (5\sqrt{2} \times 2) + (9\sqrt{2} \times 2) = 20\sqrt{2}$$

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

$$\frac{r}{r} \sin \hat{A} = 1/r \rightarrow \sin \hat{A} = \frac{1}{r} \quad \& \quad \cos \hat{A} = \frac{\sqrt{r}}{r} \quad \tan \hat{A} = \frac{1}{\sqrt{r}} = \frac{\sqrt{r}}{r}$$



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

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

(9)

$$\alpha \times AB = 9 \times BM$$

$$\alpha \times AM + \alpha \times MB = 9 \times BM \rightarrow \alpha \times AM = 4 \times MB \rightarrow \frac{BM}{AM} = \frac{4}{r}$$

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

(10)

phenomenon

Aman