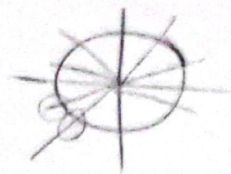


$$1) \frac{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}{a \sin \frac{11\pi}{4} + b \cos \frac{11\pi}{4}} = \tan \frac{\theta}{2} \rightarrow \frac{b}{a} = ?$$

مشتق



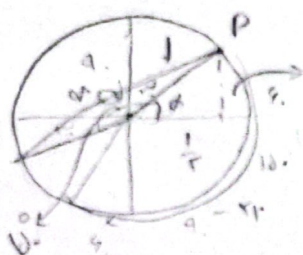
$$\frac{-\frac{\sqrt{r}}{r}a - \frac{\sqrt{r}}{r}b}{-\frac{1}{r}a + \frac{1}{r}b} = \frac{\frac{\sqrt{r}}{r}(a+b)}{\frac{1}{r}(b-a)} = \frac{\sqrt{r}}{r} \rightarrow r(a+b) = b-a$$

$$ra + rb = b - a$$

$$ra = -rb \rightarrow \frac{b}{a} = \frac{r}{-r}$$

$$= \boxed{-1}$$

$$2) P(\frac{1}{r}, y) \rightarrow \text{Unit Circle} \rightarrow -r_1 = P' \rightarrow S_{opp} = ?$$

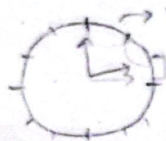


$$\rightarrow \sqrt{1 - \frac{1}{r^2}} = \frac{\sqrt{r}}{r} \rightarrow \cos \theta = \frac{r}{r} = 1 \rightarrow r_1 = 10 \rightarrow$$

$$\frac{1}{\sin 10^\circ} = \frac{m}{\sin 10^\circ} \rightarrow m = 1$$

$$m = \frac{1}{r} \times \frac{1}{\frac{\sqrt{r}-1}{\sqrt{r}+1}} \rightarrow r = \frac{\sqrt{r}}{(\sqrt{r}-1) \times \frac{1}{\sqrt{r}+1}} = \frac{\sqrt{r}}{\sqrt{r}-1} \rightarrow \boxed{P = \frac{r + \sqrt{r}}{\sqrt{r}-1}}$$

$$3) \text{Clockwise} \rightarrow r + \frac{\pi}{q} = ?$$



$$\frac{1}{q} = \frac{r}{m}$$

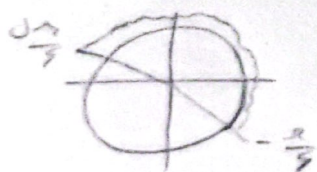
$$r \times r = r' \times m \rightarrow \boxed{r = r'}$$

$$4) \text{Clockwise} : r \dots \rightarrow \text{Unit Circle} \rightarrow r' = ?$$

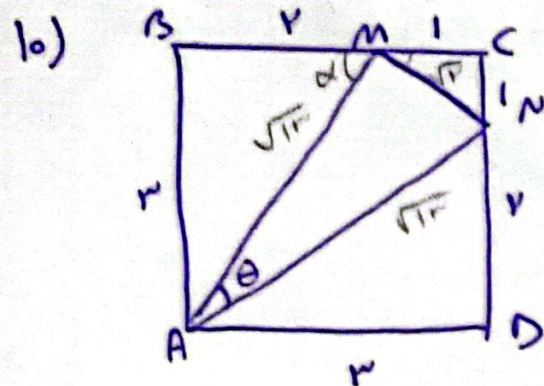
$$\alpha = \left| \frac{11}{r}m - \frac{11}{r}m \right| \rightarrow \frac{11}{r}m = 11 \rightarrow r = 11$$

$$\rightarrow \boxed{r = 11} \rightarrow \text{Unit Circle}$$

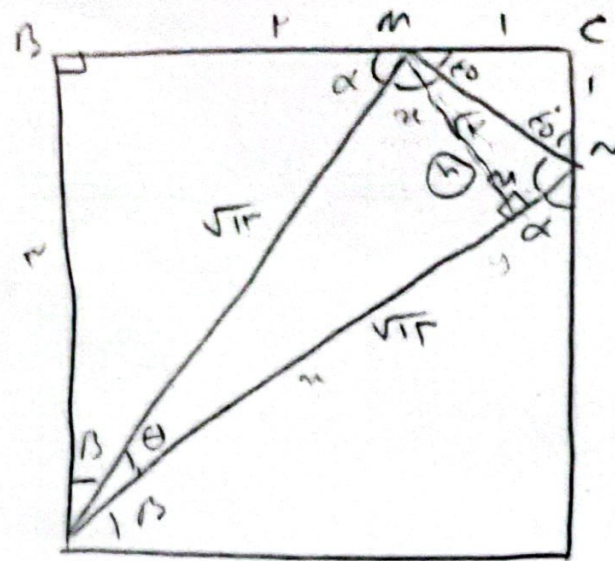
$$5) \sin x = \frac{m-r}{d}, -\frac{r}{d} < m < \frac{d-r}{d} \rightarrow m = ?$$



$$\rightarrow \frac{m-r}{d} = 1 \rightarrow \frac{1}{r} \frac{m-r}{d} = 1 \rightarrow \frac{1}{r} \frac{m-r}{d} = 1 \rightarrow \boxed{\frac{1}{r} < m < 1}$$

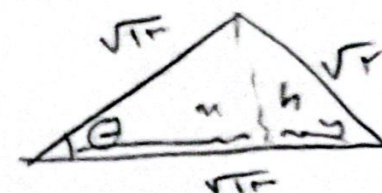


$\rightarrow \sin \theta = ?$ / $ABCD \rightarrow \mu$



$$\begin{cases} \rightarrow \alpha + \beta = 90^\circ \\ \angle M + \alpha = 180^\circ \\ \angle \theta + \beta = 90^\circ \end{cases}$$

Answer 10



$$\rightarrow h = \sqrt{1r - u^2} = \sqrt{r - y^2} \rightarrow 1r - u^2 = r - y^2 \rightarrow u^2 - y^2 = 11 \rightarrow (u - y)(u + y) = 11 \rightarrow$$

$$\begin{cases} u + y = \sqrt{1r} \\ u - y = \frac{11}{\sqrt{1r}} \end{cases} \rightarrow u = \frac{11 + \sqrt{1r}}{\sqrt{1r}} = \frac{1r}{\sqrt{1r}} \rightarrow h = \sqrt{1r - \left(\frac{1r}{\sqrt{1r}}\right)^2} = \sqrt{\frac{1r}{1r} - \frac{1r}{1r}} = \sqrt{\frac{1r}{1r}} = \frac{0}{\sqrt{1r}}$$

$$\sin \theta = \frac{h}{\sqrt{1r}} = \frac{\frac{0}{\sqrt{1r}}}{\sqrt{1r}} = \boxed{\frac{0}{1r}}$$