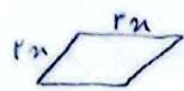


به نام خدا و با برادری

1)  $r_2 \cdot r_2 \cdot \sin \theta = \delta f \rightarrow 4r^2 = \delta f \times 2 \rightarrow r^2 = 18 \rightarrow r = 3\sqrt{2}$   
 $\hookrightarrow \cos \alpha = \boxed{3\sqrt{2}}$



2)  $\frac{1}{r} \sin \alpha (v \times \delta - v \times f) = \frac{v}{r} \rightarrow \frac{1}{r} \sin \alpha = \frac{1}{r} \rightarrow \sin \alpha = \frac{1}{r}$   
 $\cos \alpha = \frac{2\sqrt{3}}{r}$  }  $\tan \alpha = \boxed{\frac{\sqrt{3}}{r}}$

3)  $\frac{1}{\sqrt{\cos^2 \alpha}} \ominus \tan \alpha = \frac{1 \oplus \sin \alpha}{|\cos \alpha|} \rightarrow$   $\left. \begin{array}{l} \cos \alpha \text{ با } \sin \alpha \text{ منفی باشند تا علامت } \tan \text{ تغییر نکند} \\ \text{پس } \ominus \text{ را } \oplus \text{ و } \oplus \text{ را } \ominus \text{ می باشد} \end{array} \right\} \text{ناحیه سوم}$   
 $\frac{|\sin \alpha|}{\cos \alpha} = \frac{1}{-\cot \alpha} \rightarrow$   $\left. \begin{array}{l} \text{در ناحیه ی اول و دوم نمی باشد زیرا در آن صورت علامت تغییر نمی کند} \\ \sin \end{array} \right\}$

4)  $\tan = \frac{-1, \delta}{r} = -\frac{r}{f}$   
 $\tan(\frac{\pi}{2} - \alpha) = \cot(\alpha) = \boxed{\frac{-f}{r}}$

5)  $\frac{r \cos(\frac{\pi}{2} - \alpha) - r \sin(\alpha)}{\sin(\frac{\pi}{2} - \alpha) - \cos(\alpha)} = \frac{r \cos(\frac{\pi}{2} - \alpha) - r \sin(\alpha)}{\sin(\frac{\pi}{2} - \alpha) - \cos(\alpha)}$   
 $= \frac{-r \sin(\alpha) - r \sin(\alpha)}{-\sin(\alpha) - \sin(\alpha)} = \frac{-\delta}{-r} = \boxed{\frac{\delta}{r}}$

6)  $\cos \alpha = \frac{r}{r}, \sin \alpha = \frac{\sqrt{\delta}}{r}, \tan \alpha = \frac{\sqrt{\delta}}{r}$

$\frac{\sin(\frac{\pi}{2} + \alpha) - \sin(\alpha - \pi)}{|\tan^2 \alpha - 1|} = \frac{+\cos \alpha - \sin \alpha}{|\tan^2 \alpha - 1|} = \frac{\frac{r}{r} - \frac{\sqrt{\delta}}{r}}{\frac{1}{r}} = \boxed{\frac{f(r - \sqrt{\delta})}{r}}$

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

← منفی است زیرا در ربع سوم است

$$A, \tan \theta_0 = \sqrt{3} \rightarrow \frac{-r m}{m^2 - 1} = \sqrt{3} \rightarrow \sqrt{3} m^2 - \sqrt{3} + r m = 0 \rightarrow \frac{\sqrt{15}}{|a|} = \frac{\sqrt{14}}{\sqrt{3}} = \frac{r}{\sqrt{3}} = \frac{r \sqrt{3}}{3}$$

$$9, -\frac{\pi}{2} < \alpha < \frac{\pi}{2} \rightarrow 0 < \left(\frac{\pi}{2} - \alpha\right) < \frac{\pi}{2} \rightarrow \tan > 0 \rightarrow \frac{1-m}{r+m} > 0$$

$$\frac{-r}{-1} + \frac{1}{-1} \rightarrow m = (-r/1)$$

$$10, \tan(\pi_0) \cos(\pi_1) + \tan(\pi_1) \sin(\pi_0) =$$

$$\left(-\frac{\sqrt{3}}{r}\right) \times \left(-\frac{\sqrt{3}}{r}\right) + \left(-\frac{\sqrt{3}}{r}\right) \times \left(\frac{\sqrt{3}}{r}\right) = 0$$

