

$$\cot \alpha = \frac{\cos \alpha}{\sqrt{1 - \cos^2 \alpha}}$$

$$\frac{1}{\sqrt{\cos^2 \alpha}} - \frac{1}{\cot \alpha} = \frac{1 - \sin \alpha}{|\cos \alpha|} \Rightarrow \frac{1}{|\cos \alpha|} - \tan \alpha = \frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 - \sin \alpha}{|\cos \alpha|}$$

$$\frac{\cos \alpha}{\sqrt{1 - \cos^2 \alpha}} = \frac{\cos \alpha}{\sqrt{\sin^2 \alpha}} = \frac{\cos \alpha}{|\sin \alpha|} \rightarrow \cos \alpha > 0 \rightarrow \text{نقطه اول}$$

$$-\frac{\pi}{11} < \alpha < \frac{11\pi}{11} \rightarrow -\frac{\pi}{9} < r\alpha < \frac{11\pi}{9}$$

$$\sin r\alpha = \frac{m-1}{r}$$



$$\Rightarrow -\frac{1}{r} < \frac{m-1}{r} \leq 1 \rightarrow -r < m-1 \leq r \Rightarrow \boxed{-1 < m \leq 1}$$

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

$$r\pi < r\alpha < 2r\pi \rightarrow \frac{r}{r}\pi < \alpha < 2\pi$$

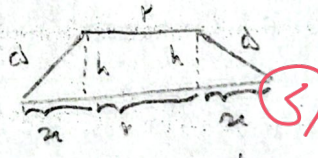


$$\frac{1}{\sin^2 \alpha + \cos^2 \alpha} = ? \rightarrow \frac{1}{(\sin \alpha + \cos \alpha)(\sin \alpha - \sin \alpha \cos \alpha + \cos \alpha)} = \frac{1}{r(\sin \alpha + \cos \alpha)}$$

$$\Rightarrow (\sin \alpha + \cos \alpha)^r = \sin^2 \alpha + \cos^2 \alpha + r \sin \alpha \cos \alpha = \frac{1}{r} \Rightarrow \sin \alpha + \cos \alpha = \frac{1}{r}$$

$$\cos A = \frac{a}{r}$$

$$\frac{r}{a} = \frac{4}{1} \rightarrow \boxed{r = 4} \rightarrow r^2 = a^2 + 9 \rightarrow r = 5$$



$$S = \frac{(r+a)r}{2} = r$$

$$\tan(\pi + a) \tan(-\pi + a) - \sin(\pi + a) \cos(\pi + a)$$

$$\Rightarrow \tan(\pi + a)(-\tan(\pi - a)) - (\sin a) \cos(\pi - a)$$

$$\Rightarrow (-\cot a)(\tan a) - (\sin a)(-\sin a)$$

$$\Rightarrow -1 + \sin^2 a = -\cos^2 a \Rightarrow \boxed{r = -1}$$

$$A = \sqrt{r} \cos(\gamma\theta) \sin(\gamma\psi) - \sqrt{r} \sin(\gamma\theta) \cos(\gamma\psi)$$

$$\cos(\gamma\psi) = ?$$

$$\hookrightarrow \sqrt{r}x - \frac{\sqrt{r}}{r}x \sin\left(\frac{r\pi}{r} - \gamma\psi\right) - \sqrt{r}\left(\frac{\sqrt{r}}{r}\right)x(\cos\pi - \gamma\psi)$$

$$\hookrightarrow \frac{-r}{r}x - \cos\gamma\psi - 1 \times (-\cos\gamma\psi) = \frac{r \cos\gamma\psi}{r} + \cos\gamma\psi$$

$$\Rightarrow \frac{\cos\gamma\psi \left(\frac{r}{r} + 1\right)}{\cos\gamma\psi} = \frac{2}{r}$$

$$f(x) = 19 \cos^r(\gamma x) \cos^r(\gamma x) \cos^r(\gamma x) \cos^r(\gamma x)$$

$$f\left(\frac{\pi}{4}\right) = ? \rightarrow 19 \cos^r\left(\frac{\pi}{4}\right) \cos^r\left(\frac{\pi}{4}\right) \cos^r\left(\frac{\pi}{4}\right) \cos^r\left(\frac{\pi}{4}\right)$$

$$\Rightarrow 19 \left(\frac{1 + \cos\frac{\pi}{2}}{2}\right) \left(\frac{\sqrt{r}}{r}\right)^r \left(\frac{1}{r}\right)^r \left(-\frac{1}{r}\right)^r = 19 \left(1 + \frac{\sqrt{r}}{r}\right) \times \frac{r}{r} \times \frac{1}{r} \times \frac{1}{r} = \frac{19 + 19\sqrt{r}}{r}$$

$$\frac{1 - \sin x}{1 + \sin x} = r \Rightarrow 1 - \sin x = r + r \sin x \Rightarrow 2 \sin x = -r \Rightarrow \sin x = -\frac{r}{2}$$

$$\tan \frac{x}{r} = ?$$

$$\sin \theta = \frac{r \tan \theta}{1 + \tan^2 \theta} \Rightarrow \sin x = \frac{r \tan \frac{x}{r}}{1 + \tan^2 \frac{x}{r}} = -\frac{r}{2} \Rightarrow 1 \cdot \tan \frac{x}{r} = -r - r \tan^2 \frac{x}{r}$$

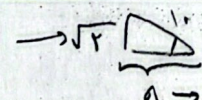
$$\rightarrow r \tan^2 \frac{x}{r} + 1 \cdot \tan \frac{x}{r} + r = 0 \Rightarrow (r \tan \frac{x}{r} + 1)(\tan \frac{x}{r} + r) = 0$$

$$\begin{cases} \tan \frac{x}{r} = -\frac{1}{r} \\ \tan \frac{x}{r} = -r \end{cases}$$

$$\frac{\sin \theta}{1 - \cos \theta} + \frac{1 + \cos \theta}{\sin \theta} = \frac{r \sin \frac{\theta}{r} \cos \frac{\theta}{r}}{r \sin^2 \frac{\theta}{r}} + \frac{r \cos^2 \frac{\theta}{r}}{r \sin \frac{\theta}{r} \cos \frac{\theta}{r}}$$

$$\Rightarrow \frac{\cos \frac{\theta}{r}}{\sin \frac{\theta}{r}} + \frac{\cos \frac{\theta}{r}}{\sin \frac{\theta}{r}} = \cot \frac{\theta}{r} + \cot \frac{\theta}{r} = 2 \cot \frac{\theta}{r} \rightarrow k = r$$

$$\sin a = \frac{\sqrt{r}}{1} \rightarrow \sqrt{r}$$



$$a \rightarrow 1 = r + a^2 \rightarrow a = \sqrt{1-r} = \sqrt{r} \rightarrow \cos a = \frac{-\sqrt{r}}{1}$$

$$\cos\left(\frac{11\pi}{r} + a\right)$$

$$\hookrightarrow r\pi + \frac{r\pi}{r} + a \rightarrow \cos\left(\frac{r\pi}{r} + a\right) = \cos \frac{r\pi}{r} \cos a - \sin r \sin \frac{r\pi}{r}$$

$$\Rightarrow -\frac{\sqrt{r}}{r} \times \frac{-\sqrt{r}}{1} - \frac{\sqrt{r}}{1} \times \frac{\sqrt{r}}{r} = +\frac{r}{r} - \frac{1}{r} = \frac{r-1}{r}$$