

$$\frac{1}{\cos \alpha} = \frac{1}{\cos \alpha} \implies \frac{1}{\cos \alpha} = 1 \implies \cos \alpha = 1$$

$$\cos \alpha = 1/r \implies r\pi \pm \frac{\pi}{r} = \alpha \implies \alpha = \frac{\pi}{r}$$

$$\sin^2 \alpha + r \cos^2 \alpha + r = 0$$

$$(1 - \cos^2 \alpha) + r(\cos^2 \alpha - \cos \alpha) = 0 \implies \cos \alpha = r\pi + \pi$$

$$\cos \alpha = r\pi + \pi \implies \cos \alpha = -1$$

$$r \sin \alpha (1 - r \sin^2 \alpha) + \sin \alpha = 1$$

$$r \sin \alpha - r^2 \sin^3 \alpha + \sin \alpha = 1 \implies r \sin \alpha - r^2 \sin^3 \alpha = 1$$

$$\sin \alpha = 1 \implies r\pi = r\pi + \pi/r \implies \alpha = r\pi + \pi/r$$

$$\frac{\sin(\frac{\pi}{r} + r\alpha)}{\cos(r\alpha)} = \frac{\cos(\frac{\pi}{r} + r\alpha)}{\sin(r\alpha)} = 0$$

$$\sin \alpha = \cos \alpha \implies \sin \alpha = \sin(\frac{\pi}{r} - r\alpha)$$

$$r\pi = r\pi + \frac{\pi}{r} - r\alpha \implies r\alpha = r\pi + \frac{\pi}{r}$$

$$\frac{r\pi}{r} + \frac{\pi}{r} \implies \frac{\pi}{r}, \frac{\pi}{r} \implies \frac{\pi}{r}$$

$$\cos(\frac{\pi}{r} + r\alpha) = \frac{1}{r} \implies \cos \frac{\pi}{r} \cos r\alpha - \sin \frac{\pi}{r} \sin r\alpha = \frac{1}{r}$$

$$\frac{1}{r}(\cos r\alpha - \sin r\alpha) = \frac{1}{r} \implies \cos r\alpha - \sin r\alpha = \frac{1}{r}$$

$$\frac{m\sqrt{r}}{r} - r\sqrt{r} \sin r\alpha = \sqrt{r} \implies \cos r\alpha + \sin r\alpha - r \sin \alpha \cos \alpha = \frac{1}{r}$$

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

$$\sin(\alpha + \frac{\pi}{4}) \cos(\frac{\pi}{4} - \alpha) = \sin(\alpha + \frac{\pi}{4}) \times \sin(\alpha + \frac{\pi}{4}) = 1$$

$$\sin(\alpha + \frac{\pi}{4}) = \pm 1 \implies \alpha + \frac{\pi}{4} = r\pi + \frac{\pi}{4} \implies \alpha = r\pi$$

$$\alpha + \frac{\pi}{4} = r\pi + \frac{\pi}{4} \implies \alpha = r\pi + \frac{\pi}{4} \implies \alpha = \frac{\pi}{4}$$

$$\sin \pi + \sqrt{r} \cos \alpha = \sqrt{r} \rightarrow r \sin \left(\pi + \frac{\pi}{r} \right) = \sqrt{r} \rightarrow \sin \left(\pi + \frac{\pi}{r} \right) = \frac{\sqrt{r}}{r} \quad \checkmark$$

$$\pi + \frac{\pi}{r} = r k \pi + \frac{\pi}{2} \rightarrow \pi = r k \pi - \frac{\pi}{r} \rightarrow \frac{r k \pi}{r} \rightarrow \frac{\pi}{r}$$

$$\pi + \frac{\pi}{r} = r k \pi + \frac{\pi}{2} \rightarrow \frac{9\pi}{r} - \frac{\pi}{2} = \frac{\pi}{r} \rightarrow \pi = r k \pi + \frac{11\pi}{r} \rightarrow \frac{11\pi}{r} \rightarrow \frac{11\pi}{r}$$

$$r \sin \cos \alpha = 1 \rightarrow -r \sin r \pi = 1 \rightarrow \sin r \pi = -1/r \quad -A$$

$$r \pi = r k \pi + \frac{\pi}{r} \rightarrow \pi = k \pi - \frac{\pi}{r} \rightarrow \frac{11\pi}{r} \rightarrow \frac{r k \pi}{r} \rightarrow \frac{r k \pi}{r} \rightarrow \frac{90\pi}{r}$$

$$r \pi = r k \pi - \frac{9\pi}{r} \rightarrow \pi = k \pi - \frac{9\pi}{r} \rightarrow \frac{1\pi}{r} \rightarrow \frac{19\pi}{r} \rightarrow \frac{r k \pi}{r} \rightarrow 2\pi$$

$$r \cos \alpha - r \cos r \pi = r \cos r \pi = 1/r \rightarrow \cos \alpha \cos r \pi \cos r \pi = 1/r$$

$$\frac{1/r \sin \alpha}{\sin \alpha} \cos \alpha \cos r \pi \cos r \pi = 1/r \quad \frac{1/r \sin \alpha}{\sin \alpha} = 1/r \quad \frac{\sin \alpha}{\sin \alpha} = 1$$

$$\sin \alpha = \sin \alpha \rightarrow \pi \alpha = r k \pi + \alpha \rightarrow \pi \alpha = r k \pi \rightarrow \alpha = \frac{r k \pi}{r}$$

$$\frac{r \pi}{r} / \frac{5\pi}{r} / \frac{4\pi}{r} \quad \pi \alpha = r k \pi + \pi - \alpha \rightarrow \pi \alpha = r k \pi \rightarrow \alpha = \frac{r k \pi}{r}$$

$$\frac{r \pi}{9} / \frac{r \pi}{9} / \frac{11\pi}{9} \rightarrow \max \alpha = \frac{11\pi}{9}$$

$$\frac{\sin \pi \alpha}{\cos \pi \alpha} \times \frac{\sin \alpha}{\cos \alpha} = 1 \rightarrow \sin \pi \alpha \sin \alpha = \cos \pi \alpha \cos \alpha$$

$$\cos \pi \alpha \cos \alpha - \sin \pi \alpha \sin \alpha = 0$$

$$\cos (2\pi) = 0 \rightarrow \pi \alpha = k \pi + \pi/r \rightarrow \pi = \frac{k \pi}{r} + \pi/r$$

$$\frac{9\pi}{11} / \frac{11\pi}{11} / \frac{12\pi}{11} / \frac{13\pi}{11} = 0\pi$$