

$$y = \theta \tan \theta$$

$$\theta = \pi/4$$

$$y(\pi/4) = \frac{\pi}{4} \tan \frac{\pi}{4} = \frac{\pi}{4}$$

$$\frac{dy}{d\theta} = 1 \cdot \tan \theta + \theta \sec^2 \theta$$

$$= \tan \frac{\pi}{4} + \frac{\pi}{4} \sec^2 \frac{\pi}{4} = 1 + \frac{\pi}{4} \cdot 2$$

$$= 1 + \frac{\pi}{2}$$

$$y - \frac{\pi}{4} = \left(1 + \frac{\pi}{2}\right) \left(\theta - \frac{\pi}{4}\right)$$