$\frac{3.1}{\tan \theta} = \frac{1}{\cot \theta}$ $\frac{1}{\tan \theta} = \frac{1}{\cot \theta}$ $\frac{1}{\cot \theta} = \frac{1}{\cot \theta}$

seco tano = do suid cosa = sind cosa = sind

suid + \frac{1}{coso} = \frac{Coso}{suid Coso}

 $tan \times + \cot x = \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x}$ $= \frac{\sin x}{\cos x} + \frac{\cos x}{\cos x}$ $= \frac{1}{\cos x} \sin x$

Prove: tanx + cosx = sin x (secx + cotx)sin x (secx + cotx) = sin x ((cosx + cosx) + cosx + c

Cota +1 = Coca (Cosa + sina) Prove LOCA (CODA + sina) = _ (CODA + sina) = CUSX + 1 = cota + 1 v cost_sint = 1-tant cost-(cost) cost - sin't (cost - sin't) (cost + sin't)

cost = Cost - singt = Cost - singt = 1 - fan2+ 14 Coso = sind ? Cus20 45,40 = 1 sin 0 = 1-cos 0 = (1-cuso) (1+cuso) 1+ coro = (1+ coro) 1-coro = 1- cuso (1+ coso) (1-coso) = sing 1- cord = sin & sind = sind a

tan & (1+ cot 2) = 1- sin a tan'a (1+ cota) = tan'a + tan'a cota = fan a + 1 $=\frac{1}{\cos^2\alpha}$ Cos 2 + sin 2 = 1 $=\frac{1}{1-Sin^2\alpha}$ sina + 1+cosa = 2 crea 1+ Cosa + 1+ cosa = sina + (1+ cosa) 2 sina (1+ cosa) = sin a + 1+2coa + cos a

sin a (1+ cosa) = 2+2000 x sin x (1+ wox) = 2 (1+CUSX) sink(1+CUSX) = 2

$$\frac{1 + \sin t}{\cos t} = \frac{1 + \sin t}{\cos t} \cdot \frac{1 - \sin t}{1 - \sin t}$$

$$= \frac{1 - \sin^2 t}{\cot t} \cdot \frac{1 - \cos t}{1 - \sin t}$$

$$= \frac{1 - \sin^2 t}{\cot t} \cdot \frac{1 - \cos t}{1 - \sin t}$$

$$= \frac{\cos^2 t}{\cot t} \cdot \frac{1 - \cos t}{1 - \sin t}$$

$$\cot^2 t + \cos^2 t + \cot^2 \cos^2 t$$

$$0 = \frac{\pi}{4} - \cot^2 t = 1 , \cot^2 t$$

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

$$\frac{3}{2} + \frac{1}{2}$$

$$\cot^2 t + 3\cot^2 t = \cot^2 t$$

$$\cot^2 t + 3\cot^2 t$$

$$\cot^2 t + 3\cot^$$