COCO = Jind Sind = - Sind coco 2/ seco = Loso coso = Loso secos = 1 tano = to coto = tano Coto lano = 1 tano = - Sind cuti = Cost Cos 20 + sin 20 = 1 1 + fan 20 = rec20 coto + 1 = cx20 tx , seco and = [ sind coso = - cos 2 (cos 2) Ex sist + coso = coso + sind

thy fana+ citx

in reme sinx 4 cos

 $tan \alpha + cot \alpha = \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha}$   $= \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha} = \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha}$   $= \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha}$ 

Prove: Sanx + Cosx = suix [secx + Cotx]

= sinx decx + sinx cotx = sinx decx + sinx cotx = sinx decx + sinx cosx sinx

= fanx + coox

 $\frac{\int dn x + con x}{con x} = \frac{s \cdot n x}{con x} + \frac{con x}{s \cdot n x}$   $= \frac{s \cdot n x}{con x} + \frac{con x}{s \cdot n x}$   $= \frac{s \cdot n x}{con x} + \frac{con x}{s \cdot n x}$   $= \frac{s \cdot n x}{s \cdot n x} + \frac{con x}{s \cdot n x}$ 

Prove: cota+1=coca (coa+sina) COCX (COOX + SINX) = SINX OF X + SINX = cuta + 1 v Prove, cost - sint = 1- tant. asof. (cost - sin 4 t (cost - sin 2 t) (cost + sin 2 t) asat. 2 Cos2/ - Sin2/ = cost - singt Cost = 1 - tant. c. 1+ cos 0 = 51/20 Cos20 +5, 20=1 51'20 = 1- cos20 1-000 = (1-coso) (1+coso) 1-coso = 1+cosov 9 (1+000) (1-000) = sind 1-030 35/2d 5120 = 51420 V

$$\frac{1-\cos^2 c}{1-\cos c}$$

$$= \frac{1-\cos^2 c}{1-\cos c}$$

$$= \frac{\sin^2 c}{1-\cos c}$$

$$\frac{\sin^2 c}{1-\cos c}$$

$$\frac{\sin^2 c}{1-\cos^2 c}$$

$$\tan^2 c \left(1+\cot^2 c\right) = \frac{1}{1-\sin^2 c}$$

$$\tan^2 c \left(1+\cot^2 c\right) = \tan^2 c \cos^2 c$$

$$= \frac{\sin^2 c}{\cos^2 c} + 1$$

$$= \frac{\sin^2 c}{\cos^2 c}$$

$$= \frac{1}{1-\sin^2 c}$$

$$\frac{\sin c}{1+\cos c}$$

$$\frac{\sin c}{1+\cos c}$$

$$\frac{\sin c}{1+\cos c}$$

$$\frac{\sin c}{1+\cos c}$$

$$= \frac{\sin^2 c}{1+\cos c}$$

$$\frac{\sin c}{1+\cos c}$$

$$= \frac{\sin^2 c}{1+\cos c}$$

$$= \frac{\cos^2 c}{1+\cos^2 c}$$

The sint = 
$$\frac{\cos t}{1-\sin t}$$

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

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

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

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

$$= \frac{1+\sin t}{\cot t} \cdot \frac{1+\sin t}{\cot t}$$

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

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

$$= \frac{1+\cos t}{\cot t} \cdot \frac{$$

 $1 + \left(\frac{1}{\sqrt{2}}\right)^2 \stackrel{?}{=} 1 \left(\frac{1}{2}\right)$  $\frac{3}{2} \neq \frac{1}{2} \checkmark$ 

\$1 (000 coto + 5,00 = coco Coso coto + sino = cost coso + sino = (0520 +5170 = 1 4 seco coto - sino = Coso reco coto - sind = Loso Sino - sind = - suid = 1- sind = cos20 1. #21 cd2 +3 wto -4 = coto-1 coto +4 Coto + 4 (coto +4) (coto -1)

= coto -1 v

Had sinx (toux cosx - cotx cosx)=1-2 cosx sinx (tanx cosx - cotx cosx) = Juix Sinx COX - Sinx COX COX = Sin2x - CUSX = 1- cox x - cox x =1-2 cosx V. 26) 7 coc2x - 5 cot2 = 2 coc2x +5 7 csex - 5 cotx = 7 csex - 5 (csex - 1) = 7csc2x-5csc2x+5 Cxx-1 = 2 csc2x + 5 V. 357 cotx + cocx - 1 = cxx + cotx = cxx cotx - cxx +1 cotx + cocx - 1 = COX + 1 - 1 Cotx - Crex +1 COX - 1 +1 5111X CODX-1+Sinx Sinx - CUDX +1 - SINX. (CUDX+SINX)+1

COOX FOODXSINX +COOX +COOX4500X41 - SINXCOX - SINX - SINX Codx + 2 cosx 8 mx + sin 2x - 1 = cos x+d cos x + cos x 2 COX Sinx 2 Cos2x + 2 cosx 2 COSX SINX = COSX + 1 = COX X + Sinx = cotx + cxx v. ( Cotx + coxx -1 = (cotx - coxx+1) (Cxx+cotx) = cotx cocx + cotx - coex - coexcotx

+ coex + cotx -1 + coex + cotx 1+ Cofx = cx2x Col2x-cx2x=-1

39 5103x-cosx = 1+511x COX Sinx - Cox 5143x - Cos3x (SIMX - COTX) SIX+ SIXCOX+CS. Sinx - COX Sinx - Cox = 1 + sinx Cosx  $\frac{71}{\csc x + 1} = \frac{\cot^2 x}{\csc x + 2\csc x + 1}$  $\frac{CXX-1}{CXX+1} = \frac{CXX-1}{CXX+1} \cdot \frac{CXX+1}{CXX+1}$ = Cxx -1 cx2x+2cxx+1 = cot 2x cx2x+2cxx+1  $75/\cos^2x - \cos^2x \csc^2x = 1$ (x2x - cos2x cx2x = csc2x (1-cs2) = 1 (sin 2) = 1 0.

If coc 2x - cox secx = cot x CX2x - CODX SECX = Los CODX CODX = = -1  $=\frac{1-\sin^2x}{\sin^2x}$ = cofax V. 78 (secx - fanx) (secx + banx)=1 (secx - tanx) (secx + banx) = secx - tanx 1+ fair seci-= Sec2x - (-1+Sec2x) JUS 3 CSC X - 5 CSEX - 28 = 3 + 7

CSEX - 4 = SINX + 7

 $\frac{3\cos^2 x - 5\cos x - 2\delta}{\cos x - 4} = \frac{(\cos x - 4)(3\cos x + 7)}{\cos x - 4}$   $= 3\frac{1}{\sin x} + 7 \quad \text{...}$ 

 $\frac{10 \cos^2 x - 6 \cot^2 x}{10 \cos^2 x - 6 \cot^2 x} = \frac{4 \cos^2 x + 6}{6 \cos^2 x - 6 \cos^2 x - 6 \cos^2 x + 6}$   $= 10 \cos^2 x - 6 \cos^2 x + 6$   $= 4 \cos^2 x + 6$