COCO = Jind Sind = Sind coco 2/ seco = Loso coso = Loso seco tano = Loto coto = L Coto hand = 1 tano = Sind cuto = Coso (0000 + sin 20 = 1 1 + tanto = secto cotro + 1 = cx20 tx seco and = 1 sind = 100 d (WD) 2 Ex sind + coso = coso + sind coso

Py fana+ Citx

in reums sind 4 coss

 $tan \alpha + cot \alpha = \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha}$ $= \frac{s.n\alpha}{cos\alpha} + \frac{cos\alpha}{s.n\alpha} = 1$ $= \frac{1}{cos\alpha} = \frac{1}{c$

Prove: Yanx + Cosx = suix (secx + Cotx)

, sinx (secx+cotx)=, sinx secx+sinx cotx = sinx di + sinx cosx cosx + sinx cosx

= faux + coox

 $\frac{\sin x + \cos x}{\cos x} = \frac{\sin x}{\cos x} + \cos x = \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x}$ $= \sin x \left(\frac{1}{\cos x} + \frac{\cos x}{\sin x} \right)$ $= \sin x \left(\frac{1}{\cos x} + \frac{\cos x}{\sin x} \right)$ $= \sin x \left(\frac{1}{\cos x} + \frac{\cos x}{\sin x} \right)$

Prove! cota+1=cxxx (cox+shx) COCX (COOX + SINX) = SINX OF X + SINX = cuta + 1 V Prove, cost 5- sint = 1- tan 2 t. asaf. (cost - sin4t = (cost - sin2t) (cost + sin2t) asat. 2 Cos2/ - Sin2/ = cost - singt = 1 - tant. ... 1+ coso = 51/20 Cos20 +5,20=1 51'20 = 1- cos20 1-000 = (1-coso) (1+coso) 1-coso = 1-fc000V 9 (1+wso) (1-cso) = sind 1-030 35/20 5120 = 51420 V

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

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

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

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

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

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

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

Tore $1 + sinf = \frac{cost}{1 - sinf}$ Coot = Cost 1-sint 1+sint = cost (1+ sint) 1- 51/2/ = cost (1+ sint) = 1+511/2 v. cot d + cord + cot d cosd

0= F Cot # + cos # + cot # cos # $1 + \left(\frac{1}{n}\right)^2 \stackrel{?}{=} 1 \left(\frac{1}{n}\right)$ $\frac{3}{2} \neq \frac{1}{2} \checkmark$

\$1 (000 coto + 5,00 = coco Coso coto + sino = cost coso + sino = (3) 45110 = 1 I seco coto - sui o = Coso reco coto - sind = do coso - sind = 1- sind = cesto 421 cd20 +3 coto -4 = coto -1 coto +4 $\frac{\cot^2\theta + 3\cot\theta - 4}{\cot\theta + 4} = \frac{(\cot\theta + 4)(\cot\theta - 1)}{(\cot\theta + 4)}$

= coto -1 M

#2d sinx (toux cosx - cotx cosx)=1-2 cosx sin x (tanx cosx - cotx cosx) = Juix Sinx COOX - Sinx COOX = 51/2x - CUSX = 1- cox x - cox =1-2cox V. 28) 7 cx2x - 5 cotx = 2 csc2x +5 7 cse2x - 5 cotx = 7 cse2x - 5 (csc2x - 1) = 7csc2x-5csc2x+5 Cx2x-1 = 2 csc2x + 5 V. 357 cotx + cocx - 1 = cxx + cotx = crx cotx - cxx +1 cotx + cxx - 1 = COX + 1 - 1 Cotx - cxx+1 COX - 1 +1 CODX-1+51:1X - CODX +1 - SINX. (CODX+SINX)+1

CODX FOODXSINX +CODX +CODX +SINX +1 - SINXCOX - SINX - SINX Costx + 2 cosx 8 mx + sin 2x - 1 = cosx+dosx + cosx 2 COX Sinx $\frac{2\cos^2x + 2\cos x}{2\cos x \cdot \sin x}$ $= \frac{CDX + 1}{5iax}$ = COX X + Sinx = cotx + cxx v. (Cotx + cocx - 1 = (Cotx - cocx +1) (Cxx + cotx) = cotx cocx + cotx - coex - coexcotx

+ cxx + cotx = 1 + coex + cotx = 1+ Cofx = cx2x $Cf^2x - cx^2x = -1$

39 _ sin3x - cosx = 1+ sinx cox Sinx - Cox 51/3x - Cos3x (Sinx - Corx) sinx+ sixcox+cos. Sinx - COX Sinx - Cox = 1 + sinx Cosx $\frac{21}{\cos x + 1} = \frac{\cot^2 x}{\csc x + 2\csc x + 1}$ $\frac{CXX-1}{CXX+1} = \frac{CXX-1}{CXX+1} \cdot \frac{CXX+1}{CXX+1}$ $= \frac{cx^2x - 1}{cx^2x}$ rx2x+2csex+1 = Cot 2x Cx2x+2cxx+1 $75/\cos^2x - \cos^2x \csc^2x = 1$ (x2x - cos2x cx2x = cx2x (1-cx2) = 1 (sin 2) = 1 V.

$$Cx^{2}x - Cosx pecx = \frac{1}{\sin^{2}x} - Cosx \frac{1}{\cos x}$$

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

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

$$= \frac{Cos^{2}x}{\sin^{2}x}$$

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

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

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

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

 $\frac{79}{10 \cos^2 x - 6 \cot^2 x} = 4 \cos^2 x + 6$ $10 \cos^2 x - 6 \cot^2 x = 10 \cot^2 x - 6 (\cos^2 x - 1)$ $= 10 \csc^2 x - 6 \cot^2 x + 6$ $= 4 \cot^2 x + 6$

400