Cos(A+B) = cos A cos B - sin Asin B + cos A sin B = sin A cos B + cos A sin B = cos (45° + 30°) = cos 45° cos 30° - sin 45° + 30°

 $(375)^{2} = (35)(45)^{2} + 30^{2}$ $= (35)(45)^{2} + 30^{2} - 5.405 + 30^{2}$ $= (37)(3)^{2} - (37)(1)$ $= (37)(3)^{2} - (37)(1)$ $= (37)(45)^{2} - (37)(1$

Show Com (x+20) = Coox =0 Com (x+20) = Coox Con20 - 5,00 x 5,00 20 = Coox W

(053x(502x - 81n3x8m2x= (05(3x+2x))
= (055x

 $\cos(90^{\circ} - x) = \sin x$ $\cos(90^{\circ} - x) = \cos 90^{\circ} \cos x + \sin 90^{\circ} \sin x$ $= \sin x$

Ex (00150=?

Cos 15° = Cos (45° - 30°) = Cos 45° cos 30° + sin 45° sin 30° $= \frac{\sqrt{2}}{2} \frac{\sqrt{3}}{2} + \frac{\sqrt{2}}{2} \frac{1}{2}$ $= \frac{\sqrt{6} + \sqrt{2}}{4}$

tan (++B) = tan A + tan A

tan (A-B)= tan A - tan B

tan (A+B) = 5.1 (A+3)

$$SinAz = \frac{3}{5} A CBI / CODB = -\frac{5}{13} B CAM$$

$$COTA = \frac{4}{5} SinA CODB + CODA SINA$$

$$= \frac{3}{5} (-\frac{5}{13}) + (\frac{4}{5}) (-\frac{12}{13})$$

$$= -\frac{15}{45} - 48$$

$$= -\frac{63}{65}$$

$$= -\frac{63}{65}$$

$$= -\frac{63}{65}$$

$$= \frac{4}{5} (-\frac{5}{13}) - (\frac{3}{5}) (-\frac{12}{13})$$

$$= -\frac{16}{55}$$

$$= -\frac{16}{65}$$

$$= \frac{16}{65}$$

$$= \frac{16}{65}$$

$$= \frac{3}{65}$$

$$\frac{COD(x-y)}{Sinx siny} = \frac{Cobx coby + 1}{Sinx siny}$$

$$\frac{COD(x-y)}{Sinx siny} = \frac{Cobx coby + sinx siny}{Sinx siny}$$

$$= \frac{Cobx coby}{Sinx siny} + \frac{Sinx siny}{Sinx siny}$$

B Prove: cot(x+y) = cotx coty-1

= cotx coty +1 v

Sec(x-7) = Coox con -sinxsiny Cos x - 514 y Sec(x-y) = Cos(x-y) Conxcony - Sinx siny COX CODY - SINX SINX (COXCOT + SINXSINY) (COXCOT-SINXSIN) CJOX CODY - SINXSing Cosx cosy - singx sing COSX COSY _ Sinx sing Cos'x (1-31-7) - (1-cost)-51-7 - COOX COOY - SINX SINY Coox - Coox sing - sing + Coox sing Cos2x - sin2y

$$\frac{\sin(A-B)}{\cos A \cos B} = \frac{\tan A - \tan B}{\cos A \cos B} = \frac{\sin(A-B)}{\cos A \cos B} = \frac{\cos A \cos B}{\cos A \cos B} = \frac{\cos A \cos B}{\cos A \cos B}$$

$$= \frac{\tan A}{\cos A \cos B} = \frac{\cot A}{\cos A \cos B} = \frac{\cot A}{\cos A \cos B}$$

$$\frac{\cot A}{\cos A \cos B} = \frac{\cot A}$$

$$\frac{Cos(x+b)}{Cos(x-y)} = \frac{cosx cosy - sen x siny}{cosx cosy + siny siny}$$

$$= \frac{cosx cosy}{cosx siny} = \frac{sinx siny}{cosx siny}$$

$$= \frac{cosx cosy}{cosx siny} + \frac{sinx siny}{cosx siny}$$

$$= \frac{coty - tanx}{coty + tanx}$$

Cac (x-y) = 517x cosy + cosx sing Singx - Singy Sin (x-y) Sinx Copy + Cox sing SMX Coby + Coxsing (Sinx Cosy - Cosx sing) (sinx cosy + coxsig) Sinx Coby + Cox Sing Singx Coog _ coogx sing Sinx Cosy + Cosx Sing 5142x(1- 8147) - (1-5142)5142y - Sinx Cosy + Cosx Sing 51/2- 51/2 81/2 - Sing + 51/25.13 - 511x Cos & + Coxsing 5112x - 5129

6.3 SingA + 2 SINIA double and # 5,4 4 | Sin 2A = Sin (A+A) = Sin A COSA + COSA SINA = 2 sin A cosA / (052A = COD (A+A) = CODACODA - SINASINA = Cos A - Sin A = cos2A - (1-cos2A) = 2 cos A - 1

= 1- sm2A - sin2A =1-2 sin2A

 $Cos2A = 2cos^2A - 1$ $Cos2A + 1 = 2cos^2A = s$ $Cos^2A = \frac{1+cos2A}{2}$ $5in^2A = 1 - cos2A$

(smo 4000) = 1+ sin 20 (sind + coso) = sind + 28ind cost 4000 = 1 + mi20 L $\frac{Prone}{Sindx} = \frac{2 \cot x}{1 + \cot^2 x}$ $\frac{2 \cot x}{1 + \cot^2 x} = 2 \frac{\cos x}{\frac{5 \sin x}{5 \sin^2 x}}$ $\frac{1 + \cot^2 x}{1 + \cot^2 x} = \frac{1 + \cot^2 x}{\frac{5 \sin^2 x}{5 \sin^2 x}}$ = 2 Cost . sing - 2 Cosx smx

= sin2x ~

Ces 4x = 8 cos 4 - 8 cos x + 1 (is (4x) = W 2(2x) = 2 cus 2x -1 (cus 2x)2 $= 2 \left(2\cos^2 x - 1 \right)^{x} - 1$ = 2(4 cosx -4 cosx +1) -1.

= 8 cos4x - 8 cos2x +1 2-1

tan 2A = fan A + tan A

1 - tan A tan A = 2 fan A | 1 - fan A |