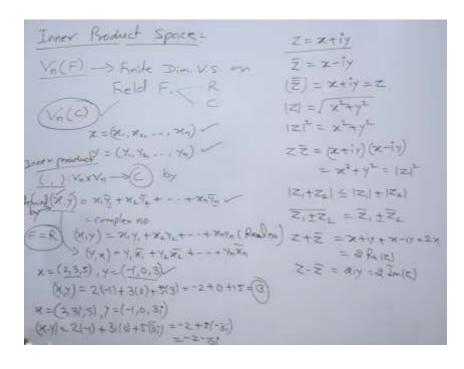
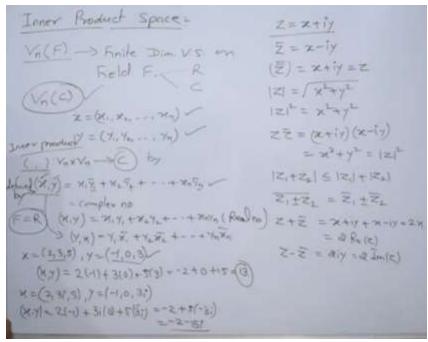
Z = x + iy $\overline{Z} = x - iy$ $(\overline{Z}) = x + iy = Z$ $|Z| = \int x^{2} + y^{2}$ $|Z|^{2} = x^{2} + y^{2}$ |Z| = (x + iy)(x - iy) $= x^{2} + y^{2} = |Z|^{2}$ $|Z_{1} + Z_{2}| \le |Z_{1}| + |Z_{2}|$ $\overline{Z_{1} + Z_{2}}| = \overline{Z_{1}} + \overline{Z_{2}}|$ $\overline{Z_{1} + Z_{2}}| = \overline{Z_{1}}|$ $\overline{Z_{1} + Z_{2}}|$ $\overline{Z_{1} + Z_{2}}| = \overline{Z_{1}}|$ $\overline{Z_{1} + Z_{2}}|$ \overline





Inner Broduct (Properties): Let X, Y, Z EVALE) and any acc 13x=0 hence (xx)=002=0 1) (x,x) 30 and (x,x)=000 x=0. (i) $(\underline{y},\underline{x}) = y_i \widetilde{x_i} + y_k \widetilde{x_k} + \cdots + y_d \widehat{x_d}$ (1) (x,y) = (y,x) $\Rightarrow \langle \overline{\gamma}, \overline{\chi} \rangle = \overline{\gamma}, \overline{\chi}_1 + \gamma_2 \overline{\chi}_2 + \cdots + \gamma_n \overline{\chi}_n$ (ii) (X,Y+Z) = (X,Y) + (X,Z) $=(\sqrt[4]{2})+(\sqrt[4]{2})+\cdots+\sqrt[4]{6}$ (x) (ax, y) = a(x, y) 7.+2 = 2.+2 v.) (x.ax) = @(x.y) = 7, 2, +7, 2, + - + 4, 2, Let x = (x,, x,, -, x,) y = (7, 4,, -, 7,) 2,2,=2,2 2=(Z;Z=,--1Z) = 7, x, +7, x, + - + 7, x, (X, x) = X, X, + X, X, + - + HAX'n 5 = 2 (71x) = 71, T. + 71, T. + - + XATA = |8/2 + (84/2+ - - + /84/2-= (24,4) 05/11/81-05/11/05/11/ 1/20 3 since 3 (xx) 30 IE (N.X) =0 (3) | NII+ 1 | X 1 + - + | NII =0 6) 1x1+0,1x12 -- 12x1+00 E) X, =0, X_=0, - 30=0

Inner Broduct (Properties): Let XIXX EVACO) and any age $=(X_1\overline{Y_1}+X_1\overline{Z_1})+(X_2\overline{Y_2}+X_2\overline{Z_2})+$ 1) (x,x) 30 and (x,x)=000 x=0 + × 1 / + × 2 11) (M.Y) = (Y, K) = (x, x+x+70+--+ x+70)+ (a) (x,y+z) = (x,y) + (x,z)(XZX+--+XXX) (v) (ax,) = a(x,) = (x1x) + (x12) v.) (x, ay) = a (x,y) TY) ax = (cix, ax, --, ax) =) (Gx, y) = GX, Y, + GX, Y, + - + GXAY, Let x=(x,, xx, , xx) 7= (7,74, - , 76) = a (N.T. + x.T. + - + x.Th) スコ(Z, ZL, --・ Zn) 7+2 = (7+2, YL+21 -- = YH+E) v) ay = (ay, ay = - , ay) 460 (X, Y+Z) = X (7+Z) + H (7+Z) (x, xy) = x, 07, + x, 07, + -- + 70, 07, - Xint + Xint +--+ Xint = *(デナモ)+*(デナモ) = g (x, + x, + + - + x, x) +--+176 (80+80) = 9 (269)

Inner Product Space - Let V(F) be a vector space on held F (F is either K or C) and (,) $V \times V \rightarrow F$ be the inner product defined on V. Then V(F) is called inner product space if inner product on V such that fallowing condition (axims:

1) Man. Negativity: $V \times CV \Rightarrow (K, I) \Rightarrow 0$ and $(K \times K) = 0 \Leftrightarrow K = 0$ 2) Conjugate symmetry: $V \times B \in V \Rightarrow (K, I) \Rightarrow 0$ ($K \times B \Rightarrow 0$) Linearly: $V \times B \in V \Rightarrow (K, I) \Rightarrow 0$ ($K \times B \Rightarrow 0$) Linearly: $V \times B \in V \Rightarrow (K, I) \Rightarrow 0$ ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ 4. ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ 4. ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ 4. ($K \times B \Rightarrow 0$) $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ ($K \times B \Rightarrow 0$) white $K \times B \Rightarrow 0$ (