

Since V, Va. .. Va is basis, it means V is a unique linear combination V1 - a1V1 + a2V2 . . anva

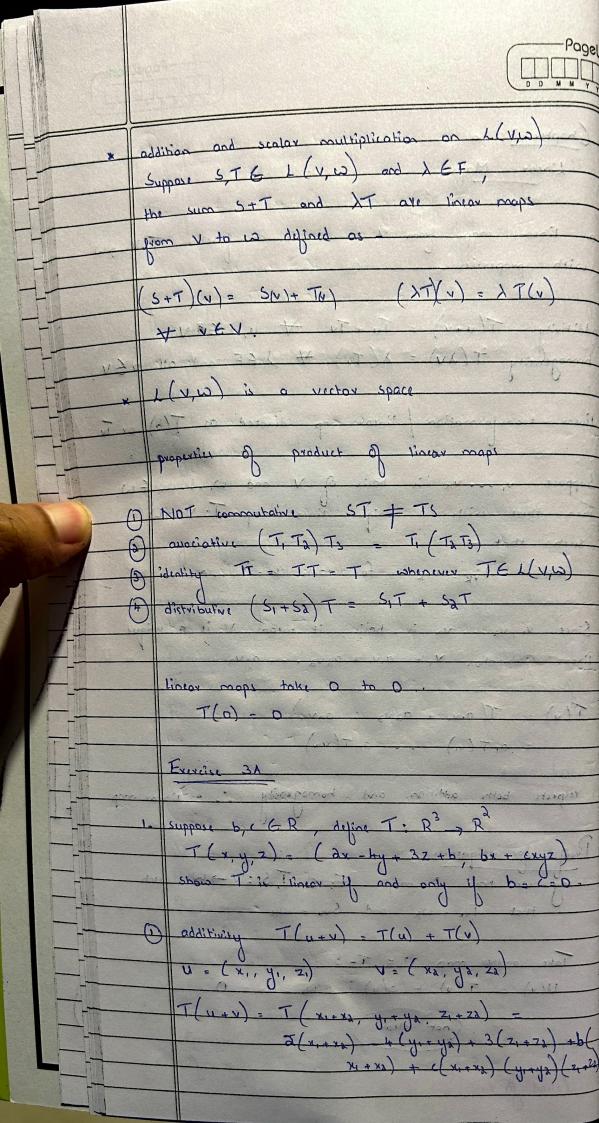
T(v) = T(a,v, + a,v, ... anva)

= a, T(vi) ... anT(va)

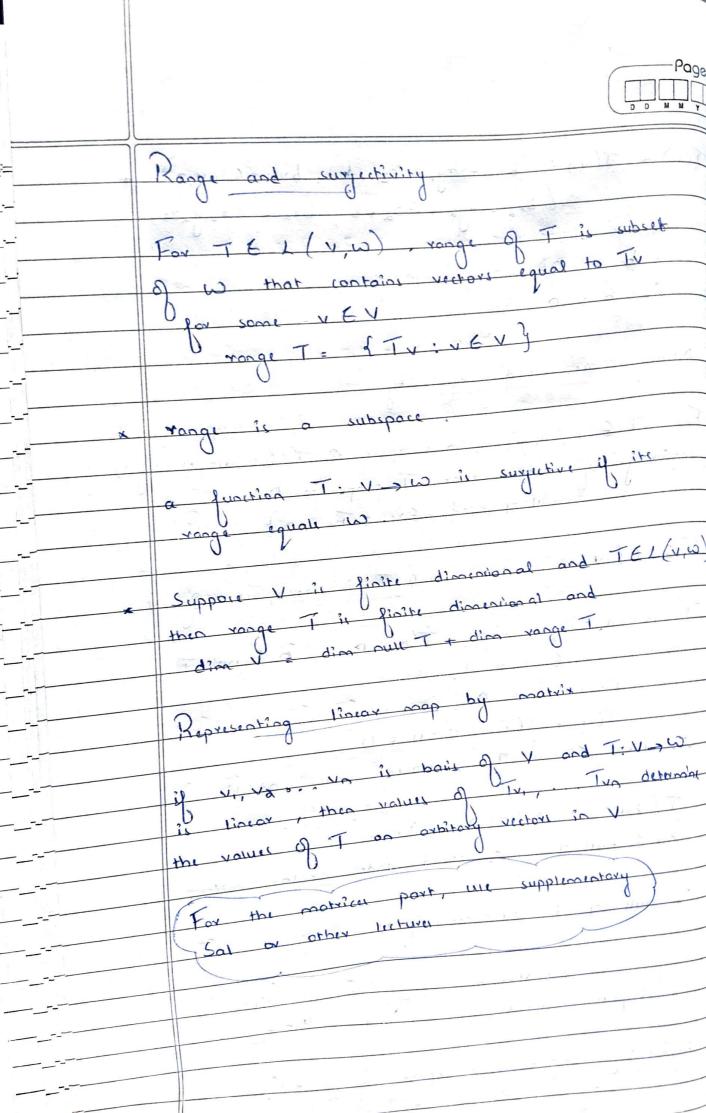
respects both addition and homogeneity a linear map

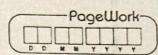
Prof - for uniqueness - 1 wed have a maps For T, S: V -> W such that Tyx wax and Syx = wx

Take another map U = T - S $U(v) = T(v) - S(v) = \omega_{K} - \omega_{K} = 0$ not clear



They a compared they are the are the are the are they are the are they are the ar b = ab in bind Null spaces and injustivity For T (V, w), rull space of Til subset of V consisting of vectors that T maps to 0 ILL(412), then null Til subspace of v Tie a linear map T(0)=0,06 null T suppore u, v & DUIL T, then I(u+v)= 01 T(u) + T(v) = 0 + 0 = 0 closed under addition T() =) (T(u) = 10 = 0 Au & oull T .. cloud under scalar mul a function T: V -> ho is ignetive if Tu = Tv injectivity <=> pull space equal for





	D D W W Y Y Y
7	junistiph linear wabs
+	a linear map $T \in L(V, \omega)$ is invertible if there exists a linear map $S \in L(V, \omega)$ such that ST equals identity approach on V and $TS = identity on \omega$
1	a linear map S & I (V, 12) where ST = I and TS = I is could inverse of T
+	an iromorphic it on invertible times map
7	hard to follows
#	Chapter - 4 polynomials
	real part adenoted by Rez = a The same imaginary part Imz = b
	7 - Rez + (Imz)i
	complex conjugate of $z \in (-2 - Rez - (Imz)i)$ absolute value of $z = z - \int (Rez)^d + (Imz)^d$
0 3	Sum of z and $\overline{z} = 7 + \overline{z} = \lambda Rez$ $\overline{z} = \overline{z} = \lambda (\overline{z}) $
	Rex < z Img < z
1	\[\frac{1}{2} \rightarrow \f