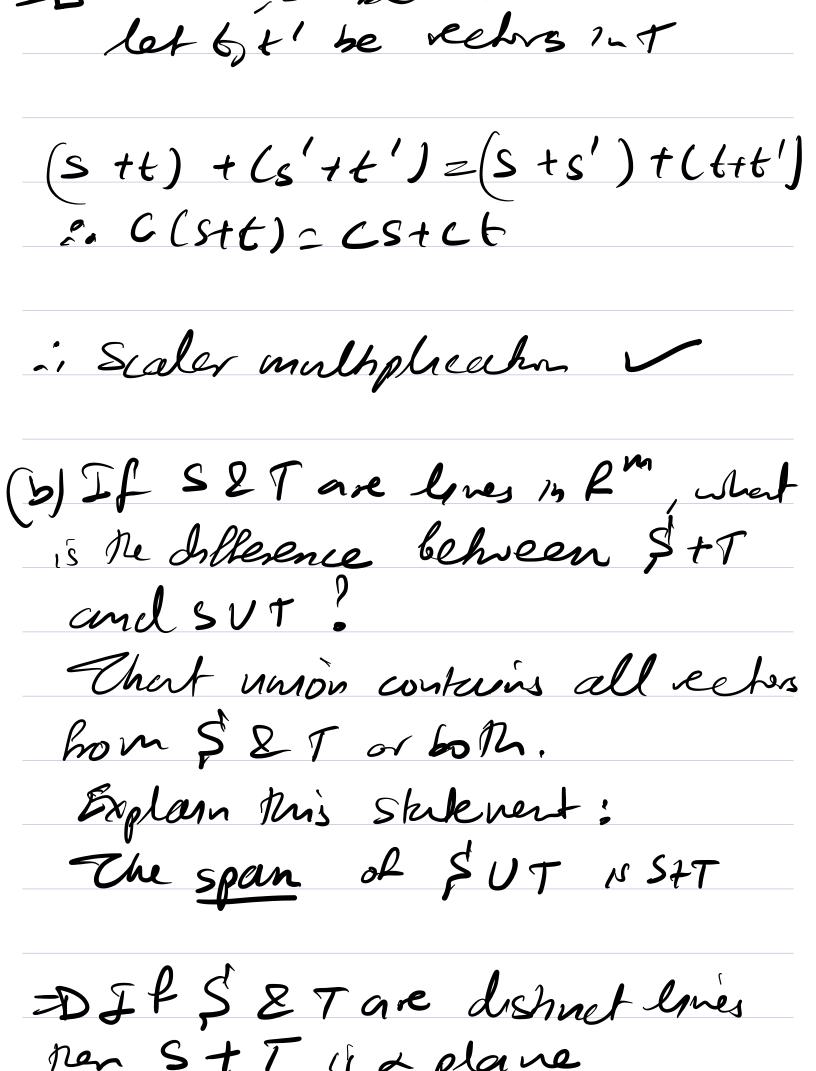
Exercises on column space & nullspa
Problem 6.1
C3. 1 #30. Intodrehm to Liveer
Suppose & and T are 2 subspaces
Suppose S and T are 2 subspaces of rector space V
Che sum \$+T conteur al s+t
The sum \$+T contrern al s+t
of a rector s in & and a rector
615T.
Show that & + T sahshe's the
requirements caddition and salar
multiplication) Br a rector space
IN Let S S be rechus m'S



uhreas SUT is only the 2 lines. *Lothe span of SUT is the set of all combinations of rectors in this union, of 2 lives In papendar it conteuns all sums stt of a rector \$115 and veeler 61is T, and there sums born StT. Since StTconkup both S&T if contrum SUT Rumer S+Tis & rehr space. SO it contents all combinutions of rectors in itself, in porticular

it contains the Jam of SUT

Uns re span of SUT is STT

Proflom 6-2 × (3,2 #18)

The plane x-3y-z=12 is perallel to the plane x-3y-x=0. One pathender point on trusplane is (12,0,0)

=> cgrechen x=12+3y+2

$$\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 12 + 3y + 2 \\ y \\ z \end{bmatrix}$$

$$= \begin{bmatrix} 12 \\ 0 \end{bmatrix} + 4 \end{bmatrix} + 2 \begin{bmatrix} 0 \\ 0 \end{bmatrix} + 2 \begin{bmatrix} 0 \\ 0 \end{bmatrix}$$

Porlem 6.3: (3,2#36)

How is the nullspace NCCJ related to the subspace NCA) & NCB) if $C= \begin{bmatrix} A \\ B \end{bmatrix}$

DN(C) 2 W(A) NNCB)
contains both subspaces

 $C_{a} = \begin{pmatrix} A_{x} \\ B_{x} \end{pmatrix} = 0$ 12 Ax 2 Bx 20.