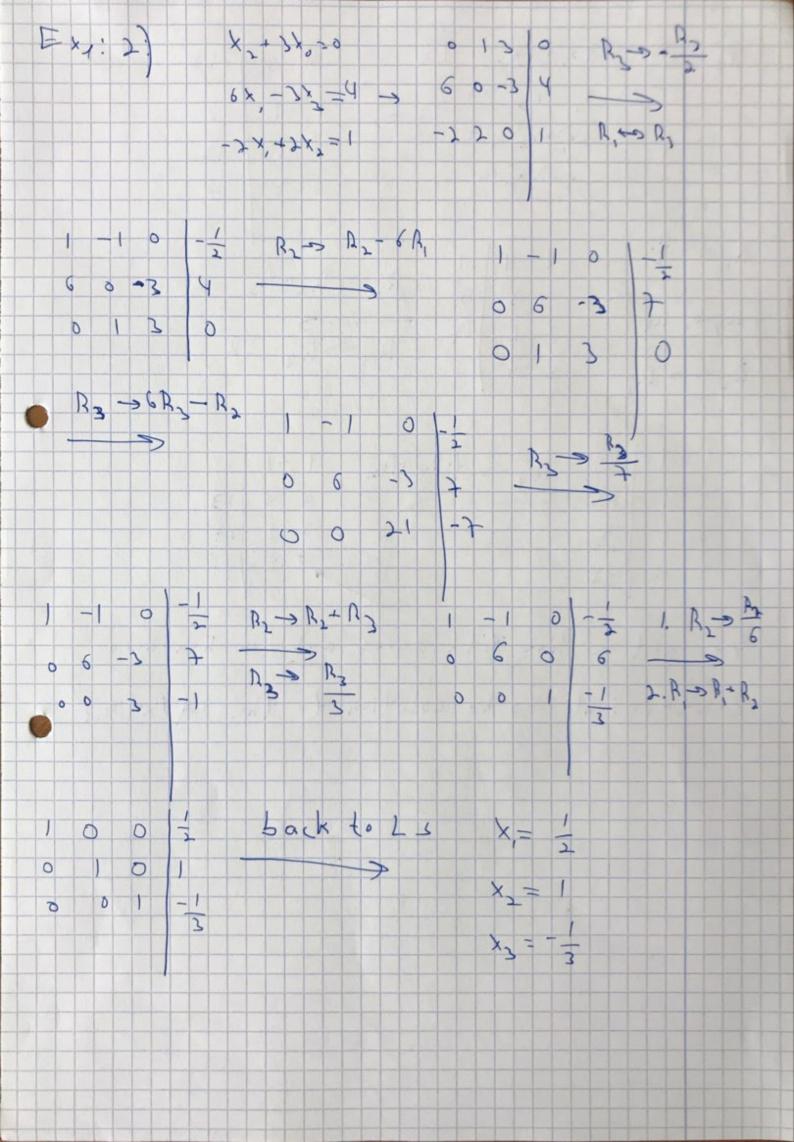
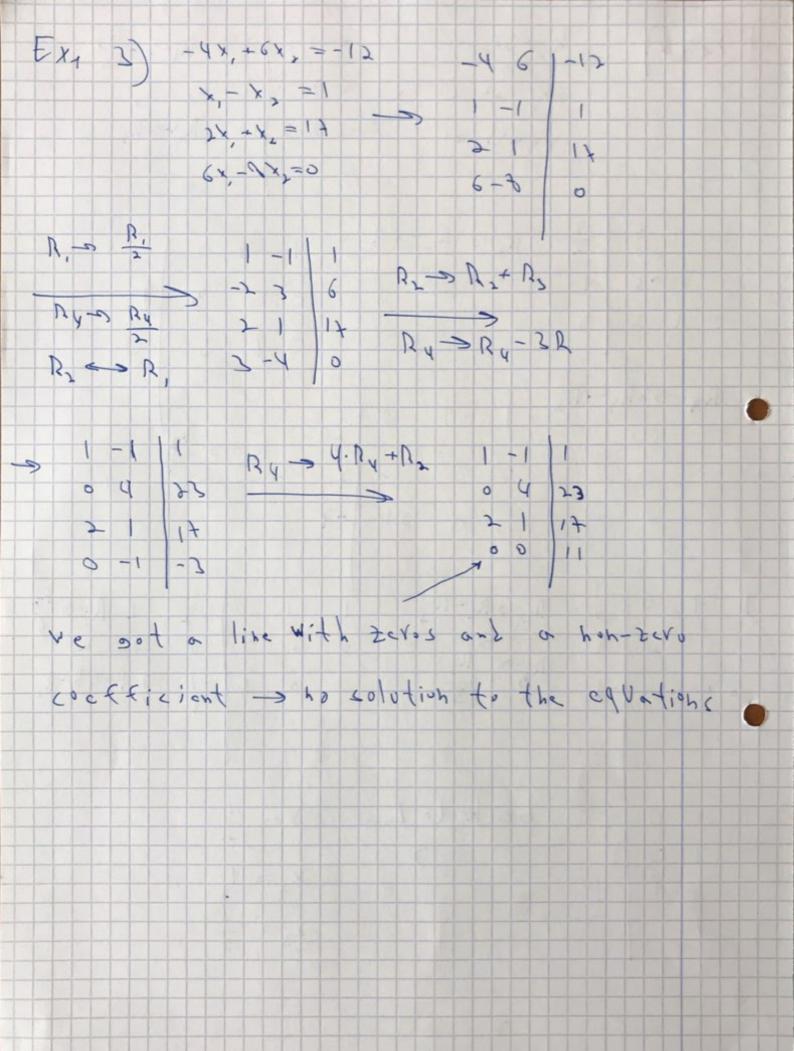
E x 1: 0.3/7 R3-3R, 1) x, +3x3=7 -> 02-4 -3 --> 9x2 - 1x3 = -8 7 7 10 73 3x + 7x2+10x3 = 73 10317 R3 5 103/7 R35 R3-R2 65 -4 -3 -> 005 10 125 12 02112 1 0 2 7 R, -> R, -3R2 10011 5/6/0 0012 1, -> B2 + 2 B2 0 ×1/5. back to L3 ×, - 1 X=0

X = 2





As there are 2 free variables, there

ore 5-2=3 leading entries, the thus

the ref. ef will not have ony zero rous and des

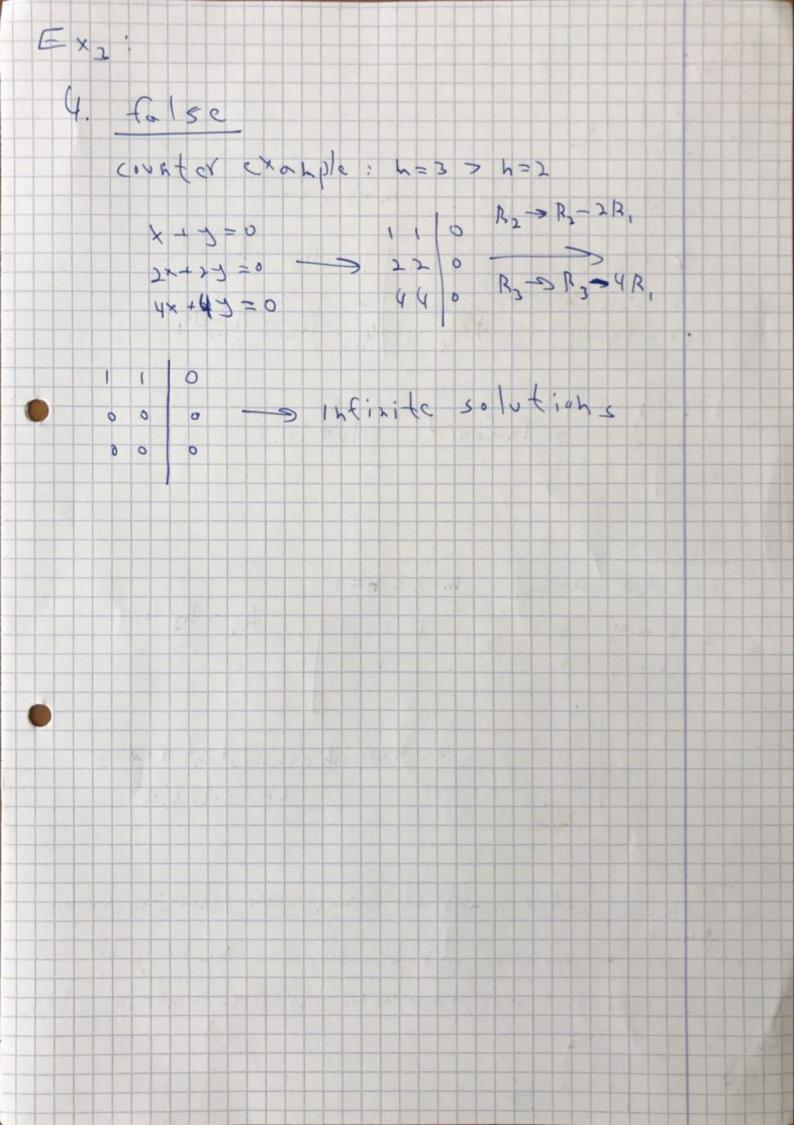
a result there won't be any Inconsistent

rows. Using hatrix A with any 6 will thus

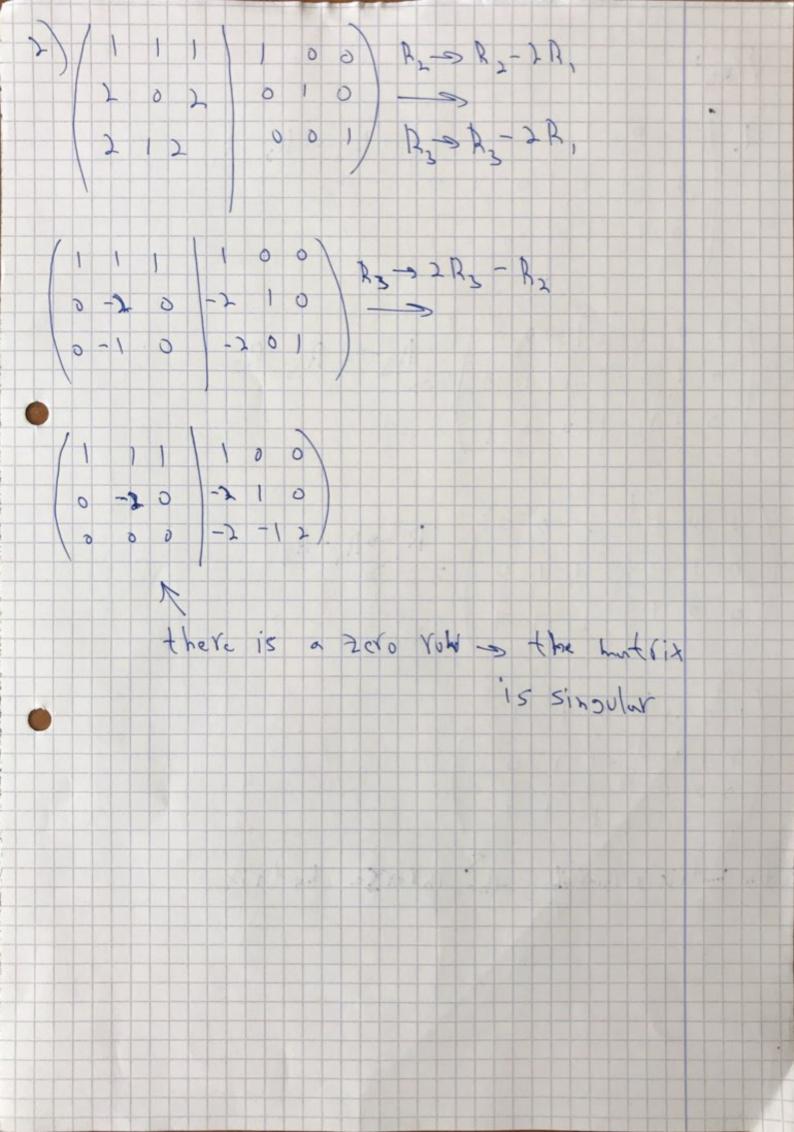
also hot contain ong Inconsistent volus

which means that there is a solution

EX3: 1. false M=3 > 4=2 counter example 13-2- 13-74× X + 2 = 1 4 1 4 15-2 15-7131 5 5 7 7 -2 プメナスタ = プ 4x - 4y = 4 1 1 1 -> Indinite solutions 0 6 6 2. false counter example: m=2 < h=3 2+x+3=6 = 1 1 1 1 6 = 3 R3-R, 0003 She have it consistent V.W > ha solution 3. true atter honder of clement your operations we will 05 hch Get 1h-h free variables and because 6=0 he will hot Get any Inconsistant vows, thus we will end up with infinite solutions free voriable h= 2 h= 3: example



Lxu: 12,5 R2-R, 0 1 1 1 0 0) R3 - R2 0 1 1 0 0 R, ->R, -R3 the matix is shvertible, the shverte huntrix



Exs:
) Probe by contradiction

itet's say A is Invertible with B as there hattik A. D = (A. A) B = A. (A.B) (A.A).D= 0.B=0 A.(A.B) = A.I = A* Yolveniz zi A C= J-24-I= 0= I+46-I moltiply by -1: => -A2 + 2A = I => A (-A+2I) = I => A is invertible and the inverse motion 15 -A+2I

3. IE A and Bare how sixonlar it means that both are You equivalent to I Fron I it possible to set A/B by 50: operations chemint element B operations operations also as A is hon singular At is also hon singular thus ATX = B will have only one solution.

3. X=-1-3t t=3+t while X y planc -> every x undy , ==0 lut's set 2 to be zero 0=3-4-5 +=-3 => X = -1+ 3·(-3) = -10 thos the intersection of the line with xy place is on the point (-10,2,0)