## Linear Algebra Assignment 1

Doğukan Gelik 2020808071

Be cause me have 3 introuns and ronk of the augmented matrix is 1.

3-1=2 parameters should be wed.

No.

System has no solutions.

ronk(A) = 2

Thus the values above are not equal, the timen system is inconsistent when m equals 1.

De No. Explained in sections 1.a and 1.b.

Then the system has no solutions.

If m \neq 0 and m \neq 1, then the system

If  $m \neq 0$  and  $m \neq 1$ , then the system has one solution.

1 2 6,2] This system should 0 1 2k,0 have no solution.
k 0 2 1

(naussian elimination 0 1 2k 0 0 0 4l²-6l+2 1-2k

We want this system to have no solution. For this,  $4k^2-6k+2=0$  and  $1-2k\neq0$  conditions should be satisfied.

 $4k^{2} - 6k + 2 = 0$  2k -2 -1  $1 - 2k \neq 0$   $1 \neq 1$ 

k = 1  $V = \frac{1}{2}$  (ancals the value.

L={1}

Dojuka Celik & 20200808071

(2)

Déjukon Gelik 20200101071 The equations according to the points:  $C_1 + C_2 + C_4 = 0$ 1 0 0 0 0 -2 0 (1+2c2+4e4=0 ERO 0010,0-20 C1 + 2C2 + 2C3 + 4C4 + 4C5 + 4C6 = 0 0 0 0 1 0 -1 0 C1 + 5c2+2c3+25c4+10c5+4c6=0 0 0 0 0 1 2 C1 + 5(2 + 6(3+25(4+30c5+366=0 8=t S=-2t Jol= (2t, -3t, 2t, t, -2t, t) < G=2+ €=-3€ C1=7€ Infinitely many solutions. Thus, we cannot find all coinces through these points. They are infinite. The equations one: I3 + I5 = 0  $I_1 - I_2 - I_4 = 0$  | Kirchhoff's 20200000 10  $I_3 - I_4 + I_5 = 0$  ) current law 020-20000 0 0 0 20 0 -20 0 -10 20 I, +20 IL=10  $20I_1 + 20I_2 = 10$   $20I_3 - 20I_5 = -10$  | Kirchhoff's  $20I_2 - 20I_3 = 0$  | Voltage law -110100 0 0 0 1 -1 1 9  $\circ$ 00101-1 0 I1=1/2 1000001/2 0120000 I2 = 0 0010000 I3 = 0 エリンル 000010

7 60666

I5=1/2

IGZIN

(5) As we know,

Cij =  $\sum_{k=1}^{n} a_{ik}b_{ij}$ , for i=1,...,m on j=1,...,P, where m and p ove lengths of the mentrices.

Thus,

$$C_{2,1} = \frac{1}{2.3} + \frac{1}{3.4} + \dots + \frac{1}{11,12}$$

Députen Cell 20200108071