Seminar 3

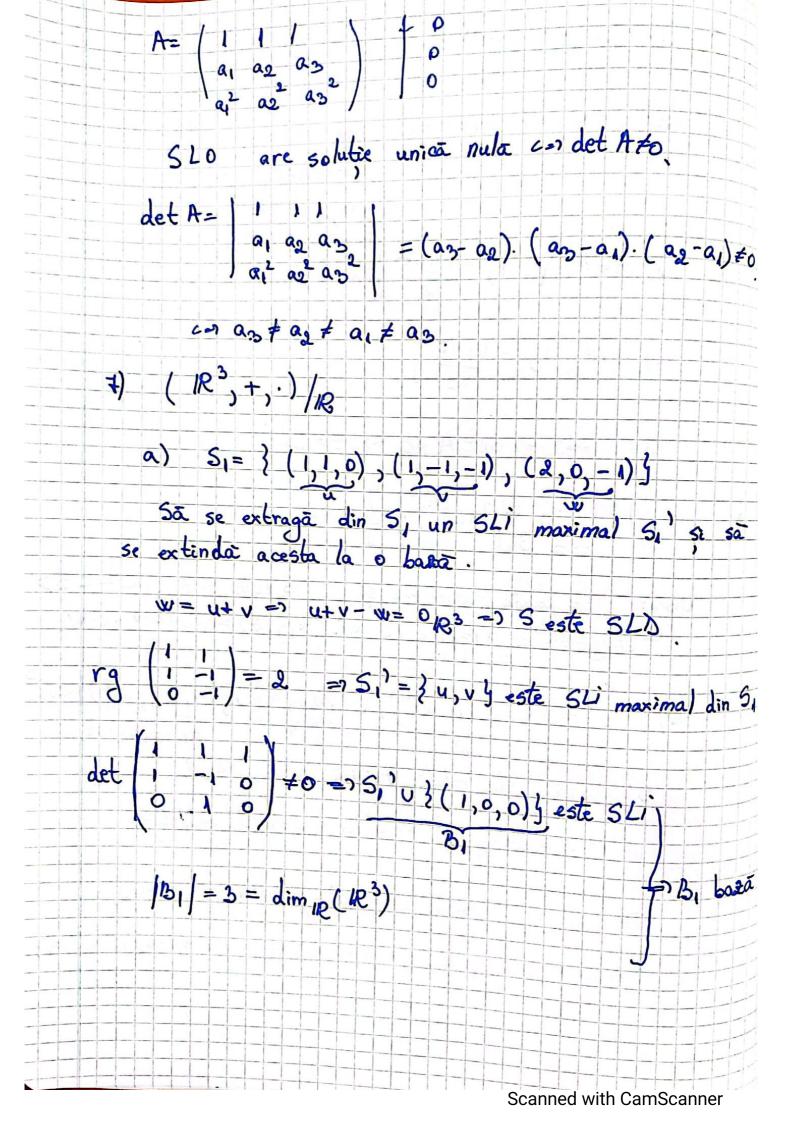
6) 
$$(IR^3, +, \cdot)/IR$$
 \$9. weet  
a)  $S = \{(1, m, 1), (m, 1, 1), (1, 0, m)\} \subset IR^3, meIR.$ 

1)  $m = \{(1, 1, 1), (1, 0, m)\} \subset IR^3$ 

$$B_0 = \{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$$
 bazā canonicā.  
 $\dim_{\mathbb{R}} (\mathbb{R}^3) = 3$ 

$$= (m-1) \cdot (-1)^{14} \cdot |m+1| \cdot |m+1| = (m-1) \cdot (-1)^{14} \cdot |m+1| = (m-1)^{14} \cdot |m+1|$$

= (1-m). (m2+m-1) det A = 0 (=) m=1 sau m2 m-1=0. D=1+4=5 =) m1,2= -1+ 15 1) melR / } 1, -1+15 } 2) me { 1, -1+\5} 3) m=2 => det A =0 => 5=5L1 |5|=3= dim (1R3) | Bata 5=5Li 063: 5e poate demonstra si ca 5 este 5G, 1R3=<5>
+ (x,y,t) EIR3 3 a,b, c e IR ai. (x,y,z) = a.u+b.v+e.w. b)  $5^{7} = \frac{3}{1}(1, a_{1}, a_{2}^{2}), (1, a_{2}, a_{2}^{2}), (1, a_{3}, a_{3}^{2})^{4}CR^{3}$ 5' baza. Ce relatie verifica a, az, az? |5'|=3 = dim/R 1R3 =75'bazā c=) 5' este SLi Fie 2, B, 8 ell ai d. u'+ B. v'+ 8. w'=0/123 => (d+ p+ y, d.a.+ p.ae+y az, d-a,2+p.ae+8.ag)=(0,0)

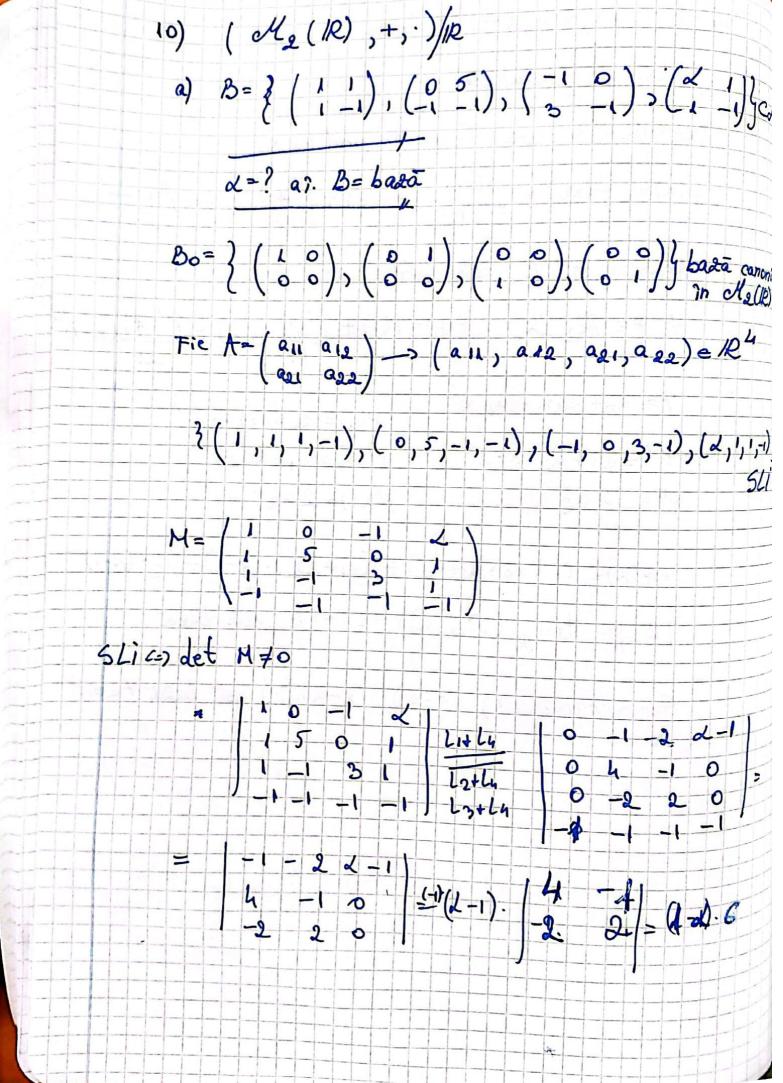


b) 
$$S_{2} = \{(1, 2, 3)\}$$
 $S_{2} = \text{ste } SLi, \text{ nu este } SG$ 
 $S_{3} = \text{extenda} \text{ la } 0 \text{ base} a$ 
 $(1, 2, 3) \neq 0_{10}3 = 7 S_{2} \text{ este } SLi$ 
 $n = \text{nr. minim. de vectori} \text{ din } SG = 7 S_{2} \text{ nu este } SG.$ 
 $det \begin{pmatrix} 1 & 1 & 0 \\ 2 & 0 & 0 \\ 3 & 0 & 1 \end{pmatrix} \neq 0 = 7 B_{2} = S_{2} \cup \{(1, 0, 0), (0, 0, 1)\}^{2} = \text{ste } SLi$ 
 $B_{2} = SLi$ 
 $B_{3} = SLi$ 
 $B_{4} = 3 = \dim_{10}(IR^{3})$ 
 $A = SLi$ 
 $A = SLi$ 

$$5_3' = \{(1,0,-1), (2,1,3), (1,1,1)\}$$
 SLi maximal s

 $4 \text{ dim } c S_3 > = 4 \text{ dim } c S_3' ? = 3 = 7 S_3' \text{ basea } (5 \text{ li si dim}_R(R^3) = 1 S_3' \text{ dim}_R(R^3) = 1 S_$ 

b) 
$$B_2 = \frac{1}{2} \frac{1}{1} \times -\frac{1}{2} \frac{1}{1} = \frac{1}{2} \frac{1}{1} =$$



b) 
$$S = \left\{ \begin{pmatrix} 1 & 0 \\ 1 & 1 \end{pmatrix}, \begin{pmatrix} 2 & 3 \\ 1 & 0 \end{pmatrix} \right\} \subset \mathcal{O}(D)$$

$$Se \neq \sum_{i=1}^{n} SLi \cdot SE \approx complete \geq \sum_{i=1}^{n} A = \sum_{i=1}$$

$$\det\begin{pmatrix} 1 & 2 & 1 & 0 \\ 0 & 3 & 0 & 1 \\ 1 & 0 & 0 & 0 \end{pmatrix} \neq 0.$$

$$6 = \frac{1}{2} \begin{pmatrix} 10 \\ 11 \end{pmatrix}, \begin{pmatrix} 23 \\ 10 \end{pmatrix}, \begin{pmatrix} 10 \\ 10 \end{pmatrix}, \begin{pmatrix} 01 \\ 00 \end{pmatrix}, \begin{pmatrix} 01 \\ 00 \end{pmatrix}, \begin{pmatrix} 01 \\ 00 \end{pmatrix}, \begin{pmatrix} 01 \\ 01 \end{pmatrix}$$

$$|5| = \dim_{\mathbb{R}} (\mathcal{A}_{L}(\mathbb{R})) = 4$$

-55 basa

c) 
$$S=\frac{1}{2}(1-1),(20),(3-1),(-1-1)$$

$$=\frac{1}{2}$$

$$=\frac{1$$

2. SLi max. si sa se extenda la o bassi