SEMINARUL VIII NPARTEA A III-AN ALGEBRE BOOLE

ALT ENUNT SO ALTA RESOLVARE PENTRU EXERCITIUL DE LA PAGINA 43 DIN SEMINARUL AL IIII-LEA) PARTEA I:

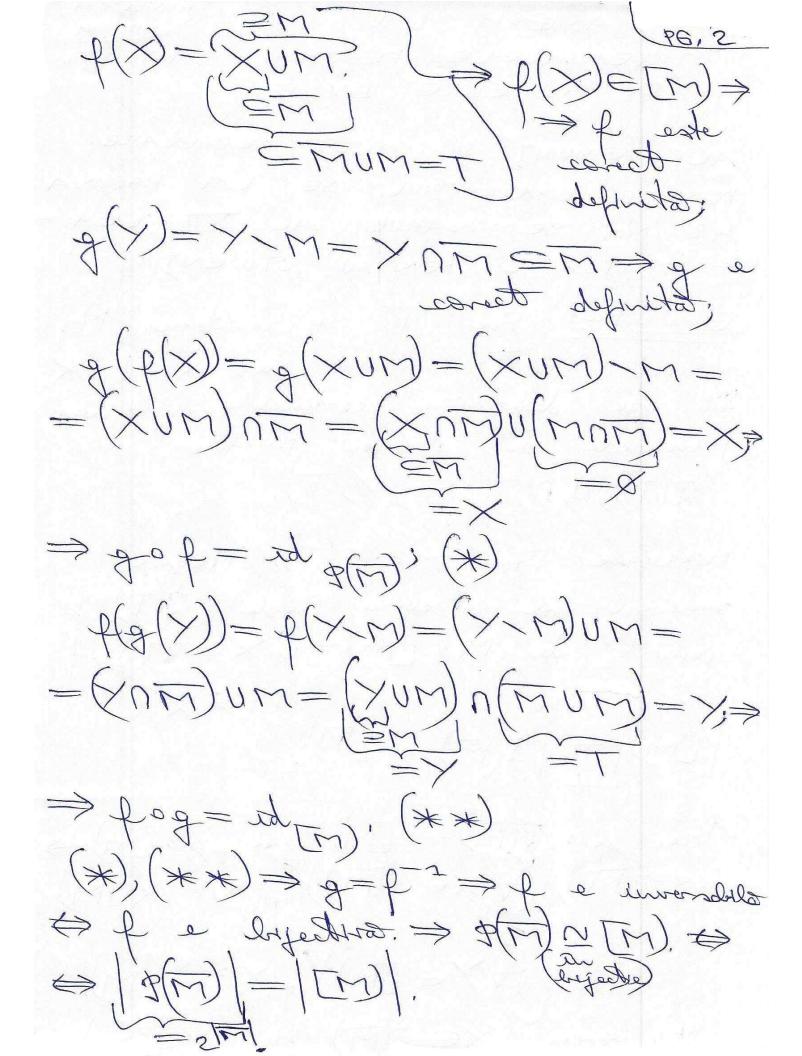
Exercêtu: Fre T & millione. D. flecare XET, volation en X=TX La se determine cardinalele filtrelon principale de debrei Boole (まし)かり、一きを丁

RESOLVARE: Fre MEG(T). Frohul principal al algebrai Boole 9(T)

governt de M: [M]=EXEP(T)

| [m) = | 2 (m) = 2 [m] = 2 [m]

Fre  $f: 2(m) \rightarrow (m)$  or  $g: Em) \rightarrow 2(m) \rightarrow 2(m$  $AY \in Im)(a(x) = x m).$ A YEM!



Exemplu: In easel an care T este fruits: |T| = nEM, arem: daes ME 9(T) > |M| = le EON) > |M| = = n-k (0) > | [m) = 2 m k an algebra Boole 9(T). Exercibre temos: Fre nEM\* Folosind

exemplul de mai sus si faphul se

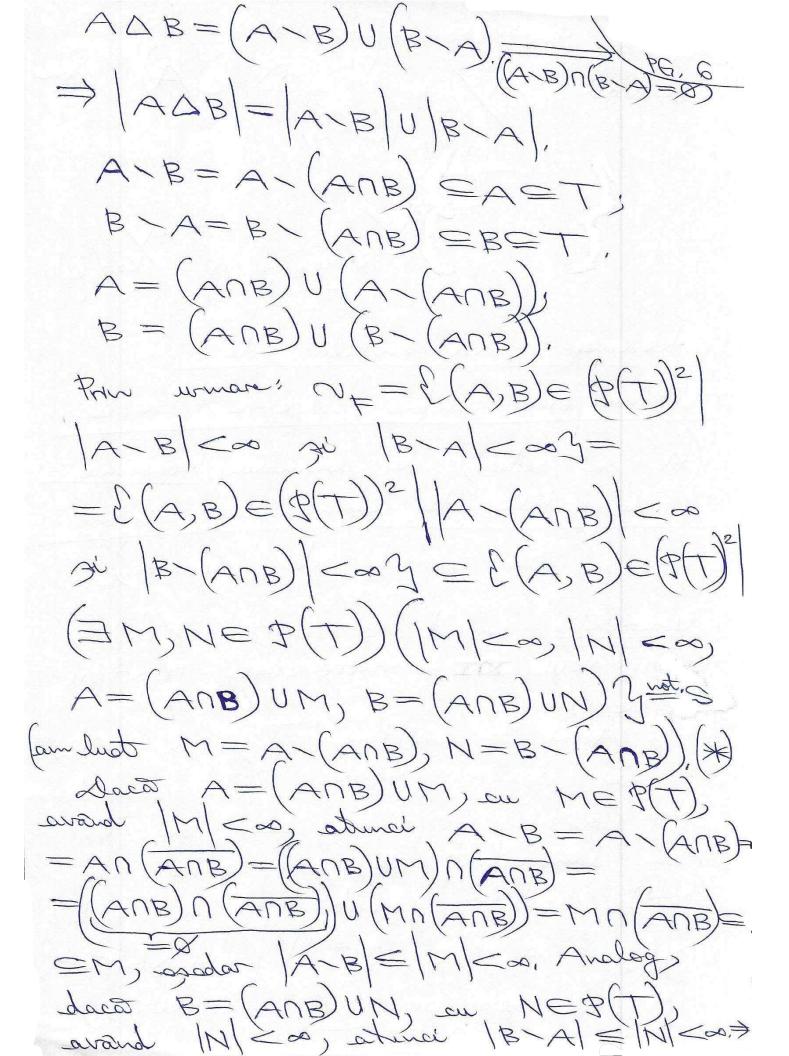
fundua f: 9(2m) > L = E(xym, x)

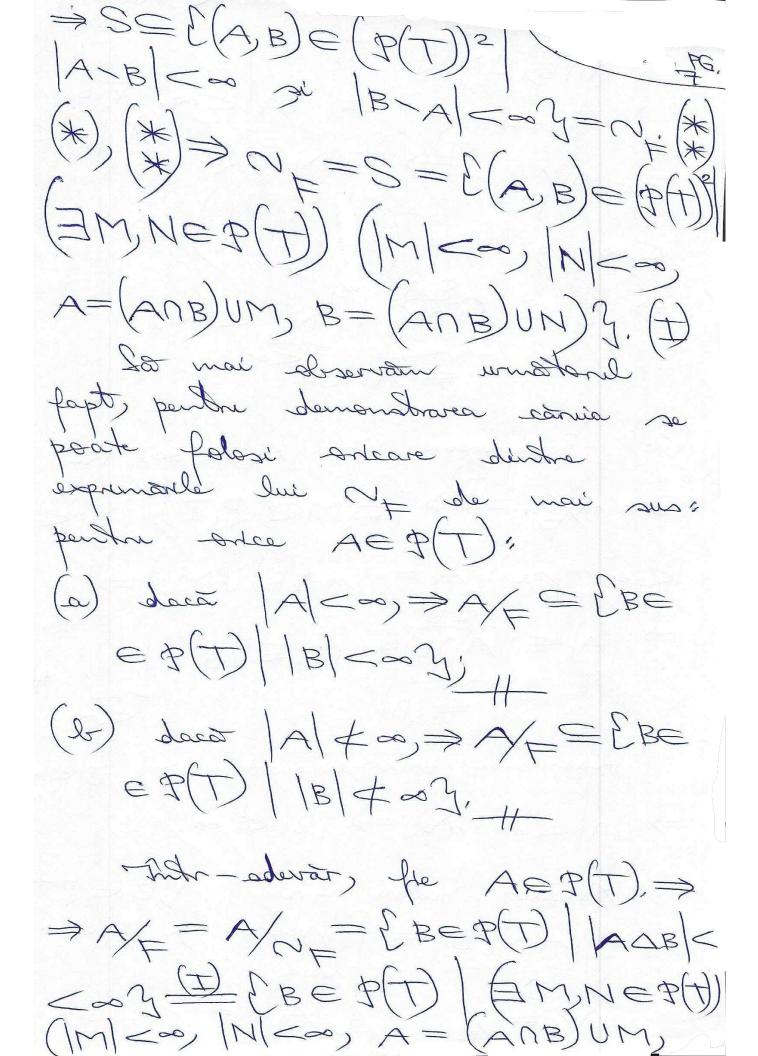
xym, xne L = E0, 23/3, definited prin:

HME 9(2, m) (fm) = (xm(2), m) xn(y)) (rectoral ecracteristic) este monorfrom boolean de la  $\Re(\overline{\chi}_N)$  la  $Z_2$ , so se deduco faplul co, ph once  $\times_{2^{n}}\times_{2^n}\times_{2^n}$  =  $\{0,2\}$ , on algebra Boole  $Z_2$ ,  $\{0,2\}$ , on algebra Boole  $Z_2$ ,  $\{0,2\}$ ,  $\{0,$ va folosi observable umaboare: pt.
once ×2,..., ×v= L= E0, 13, does (Er=ix | witsig=M us mother June = (i) mx == = x + ... + xx == = x = 1 endered ea se mai sus, XM e function e cardenstances.

Observation primal EXERCITIVE 20/76. 27/SEMINARUL JIII, PARTEA I: Dacot A gi B sunt offeline Boole, iar f: A > B este un norfour bookson, somei congruenta la (E+3) I julisteles obsides lui A este: Np-2(E23) = E(XX) = A2 x => y= f-2(E23) 3= E(xx)= EA2 / f(xexy) = E(x,y) EAZ / f(X C) = 13 = E(X) EAZ f(x) <> f(y)=13=E(xy)=22/ f(x) = f(x) = Kor(f): meleul de sagestat dublet al lui f - a se redea proprietatea de universalitate a multimat factor, an capitalul restima cursulai prival relatile de échiralente si partifille associate lor. 17th, once function h: X->/ Ker (h) E Eg (X). 170. orlae morfism loodeau f: A > B, Ker(f) & Con(A). (A

Existenta isomorfismului to. 5 Dodean A/2(22) ~ P(A) este -A (Erz) = A Ker(f) de teletremahund de isomerfram penha algebre Boole. (A se redea, de examplu, teorema fundamentales de isomorfon pentre grupuri, an euroul de algebra.) Observation privid EXERCITIUL & PG. 20/ SEMINARUL JUIL, PARTEA I: F al algebrai Boole F(T) format din partile cofuite ale lui T, ind solvengers, ou tookenamed up 3(T) executes execté filher exter  $N_{\pm} = \mathcal{E}(A, B) \in (\mathfrak{P}(T))^2 / |A \triangle B| < \infty$ jettellege istablig perten Au loc urmotoarele egalitatig (T)\$238 A solve entrud





B=(ANB)UNG. (II) (a) Presupurom et /A/<a>, Fre
BEAL, A/CO, Fre
[ANE A(T))(IN/C  $C = A \cap B \cup N =$ > | B | = | ANB | + W < 00. E/A/<00 (b) Presupurem et A/ La, tre Co or A = (ANB)UM.) >>  $\Rightarrow |A| \leq |A \cap B| + |M| \leq |B| + |M|$   $\leq |B|$ Presupurem pan abourd at B/Cad  $\Rightarrow |A| < \infty, X_0, \Rightarrow |B| \not\leftarrow \infty.$ Asodor, poutre some A,BEA(T)

dans (ANEB, ) |A| < 0 si |B| < 0

A = B | V|A| + 0 st |B| + 0