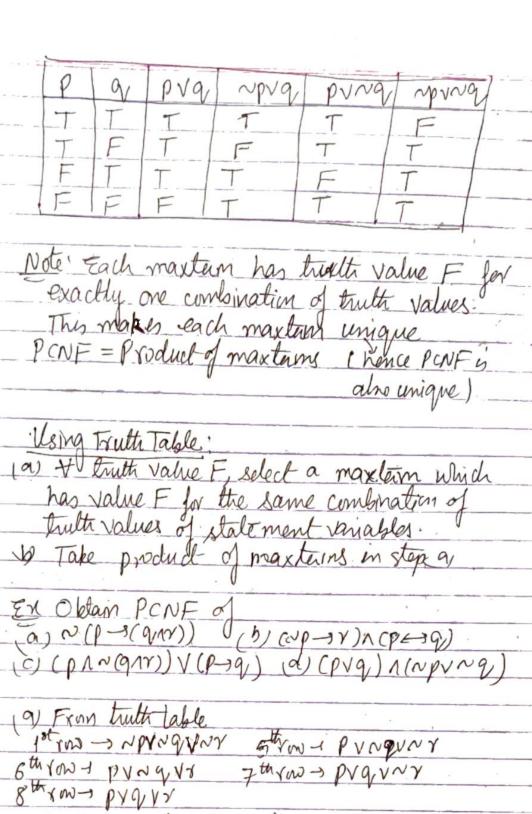


(PV91) 16PARQ) D & replace 2) (3 (x (4)) V(~ 9) E) [CPV a) MP)] NWA) E(PARP) VCQARP)) 1(29) (· : FVA GA.) (NP/a)/(Na) (=) ~P \(Q\1~Q\) =) PONF does not exists as it is a centra di chi on EX Write in PONF (~PRQ) V (PANY) A(qV~q) ((NDVOVA) A (NDVO VAL) A (BUNNO) A(DINAWA) (=) (wbrdy,) r(bundd) r(wbrdyn,) r(bundun) Principal Conjunctive Normal form, maxterms' Elementary sum in which variable and its negation do not occur simultaneously eg max tarms of peq: pray, ~pvq, ~pvq, ~pvq, ~pvq, n-svariables 2" - max turns



p) (~ b-11) V (brid T=) (~b rd Nd Nd) V (~brd nd) (brad nd)

· N(P-)(q/M)=)(prq,Vx))(prq,Vx))(prq,Vxx)

V (bradal) V (brdra)

(=) (PN ~ d N ~ N) V (bN ~ d ~ N) V (~ brd ~ N) (C) (PAN(9,1V)) V (P-9) - Toutology hence PCNF does not exist (d) (pvq) 1 (np1 nq) (=> (ontradiction)
(=> (pvq) 1 (npvq) 1 (pvnq) 1 (npvq) Without using truth table: 1) Femore all -> 2 => by ~, V, 1 only
2) Eliminate ~ before sums & products using De Mivgas is law (3) Apply distributive property (4) Drop teurs which are tautology (re prop) (5) Introduce the missing variable in elementary sum by taking its sum with contradiction is (brd) (brd) A (LVUL) 6) Repeal step 5 to U all elementary sums are reduced to product of maxtany 7) Delete identical maxterns Find PCNF of a. prcpragry P = PY(q, (nq) (introducing 9) =[(brd)v(Lvnd)]V[(brnd)n(Nm)] (introducing (E) (PVQVV) A (PVQVNY) A (PVNQ) A(PVNQ)

therefore, $p^{(pv-qvr)} = (as (pv-qvr) is already in expression for p)$

