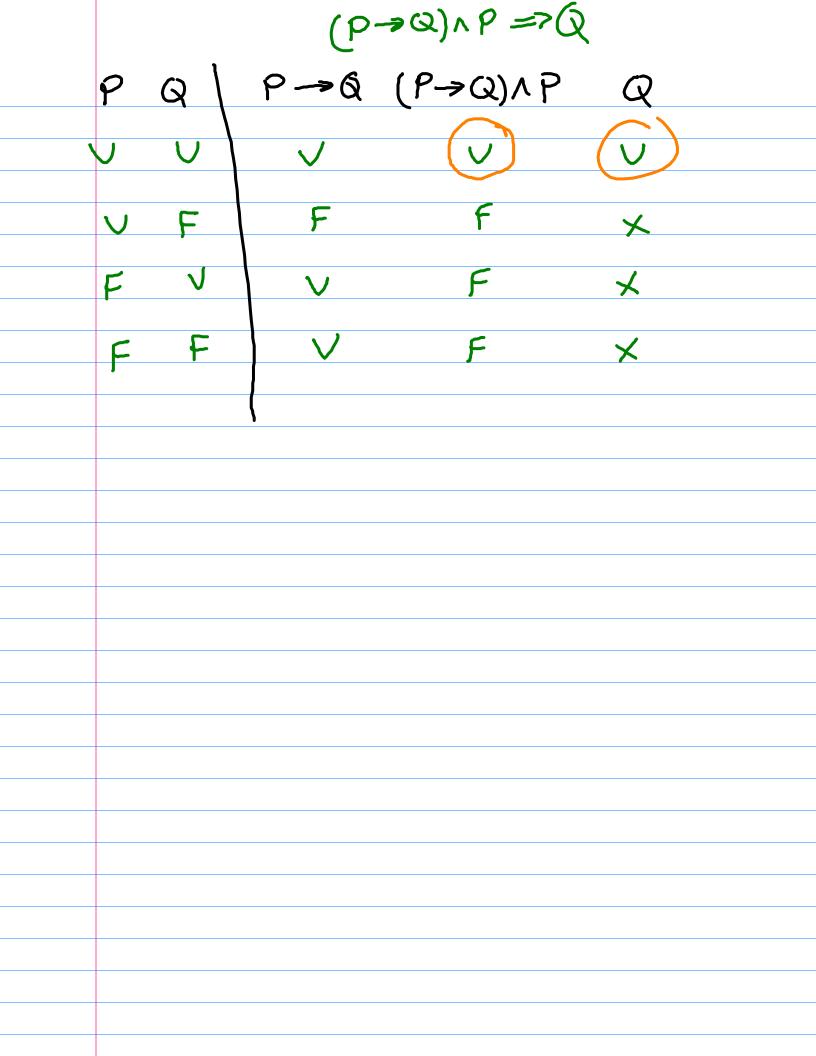
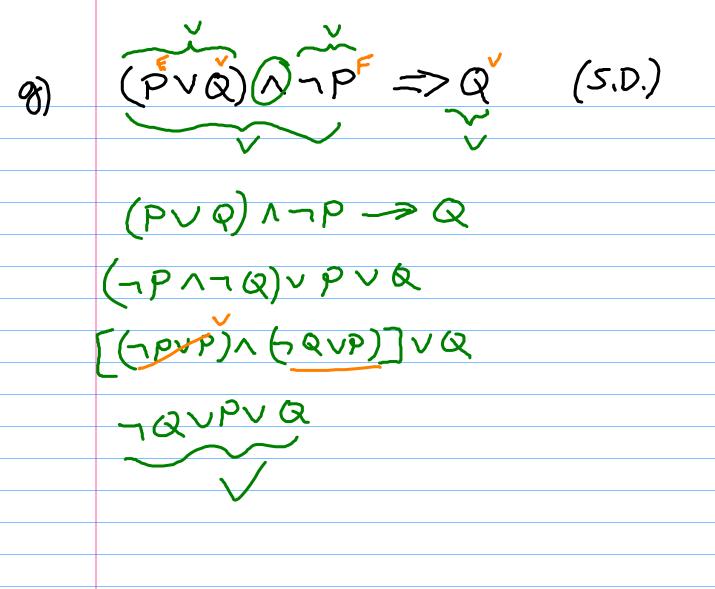
d)
$$P \Rightarrow P \lor Q$$
 (Abiquo)

 $P \Rightarrow P \lor Q$
 $P \Rightarrow Q \land P \Rightarrow Q \quad (Modis ponew)$
 $P \Rightarrow Q \quad (Modis ponew)$
 P



(modus Tollems) (P→Q) 1 ¬Q ⇒ ¬P [(P->Q) 17 Q] ->7P 7 (P-Q) VQ V7P (PATQ)VQVTP [(PUQ)/(TQUQ)]UTP PVQV7P



h) P^Q =>PUQ PAQ->P p => puQ PNQ => PVQ PMQ-PVQ 1PV-QUPVQ K) P=>7P ->Q i) P=Q=P PARAQ P=>~QVP PATQUP TPVPVQ TPVTQVP l) (P→Q) =>(PNR)→Q つりしの => つりしつなしの (7PUQ)=> (PUQ)UNR a ⇒ avar ADIGATO

m) P->Q (=>(pvQ)->Q P-Q => 7 (PVQ) VQ (=>(7P17Q)VQ (=> (7PVQ) ~ (7QVQ) TPUQ => TPUQ n) PAQ →R ← P→(Q→R) <=> nPv(Q > R) (=> -PV(1QVR) (TPV7Q)VR =>7(1PV7Q)->R → PAQ → R

 $(P \rightarrow R) \land (Q \rightarrow R) \iff P \lor Q \rightarrow R$ $(\neg P \lor R) \land (\neg Q \lor R) \iff (\neg P \land \neg Q) \lor R$

