## Lemma 2.1

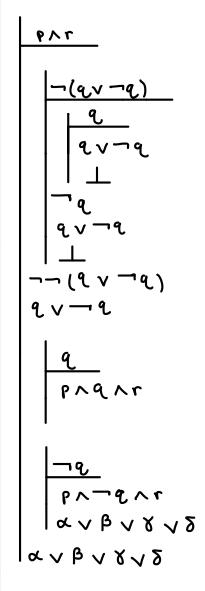
Va,b,c ∈ {T,F} (CO(a,b,c) ⇔ ¬axbxc v ax¬bxc v axbx-c v axbxc)

Let α:= ¬PΛQΛΥ β:= PΛ¬QΛΥ δ:= PΛQΛ¬Υ

## Definition 2.1

Let CO(a,b,c):= anbvancvbnc

 $\forall a,b,c \ (co(a,b,c) \iff \neg a \land b \land c \lor a \land \neg b \land c \lor a \land b \land \neg c \lor a \land b \land c$ | r | ρνηνι | ανβνγνδ



```
-ρλ9λ1
ανβν8νδ
     | X V B V Y V 8
   ペッβッ४ッδ
    CO(p_1q_1r) \Longrightarrow P \land q \land r \lor P \land q \land \neg r \lor P \land \neg q \land r \lor \neg P \land q \land r
    PNQ NTYPNQN-TVPN-QNTV-PNQNT
      PVGVL
     PNQ V PNT V QNT
      PVGV-L
       P
     | PNQ V PNT V QNT
      PNQ V PNT V QNT
       9
     | PNQ V PNT V QNT
    P ~ Q ~ P ~ T ~ Q ~ Y
   |CO(p,q,r)|
 P \sim Q \sim V \sim P \sim Q \sim V \sim P \sim Q \sim V \implies CO(P_3Q_3P)
CO(p,q,r) \stackrel{\sim}{\Longrightarrow} P \land Q \land r \lor p \land Q \land \neg r \lor P \land \neg Q \land r \lor \neg P \land Q \land r
|\forall a,b,c|(co(a,b,c) \iff \neg a,b,c \lor a, n \neg b,c \lor a,b,n \neg c \lor a,b,c
```