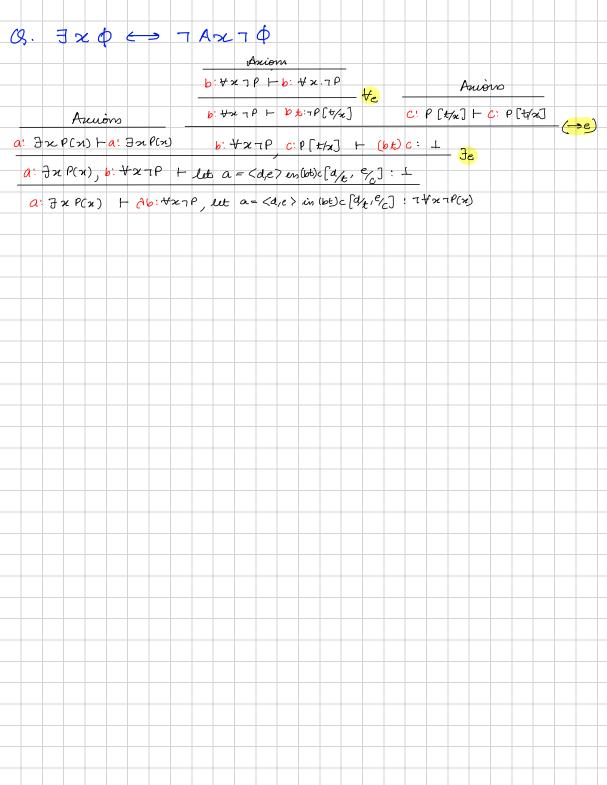
## 

dabeling Proof Rules with Construction  $C: \forall x \Leftrightarrow C \in TT \Leftrightarrow (x) \text{ gener}^2 \text{ of } fa^2$   $C: \exists x \Leftrightarrow C \in \Sigma \Leftrightarrow (x) \text{ gener}^2 \text{ of } \text{ hoduct}$  $\exists \mathbf{i} \ \frac{\Gamma \vdash a : \phi[t/x]}{\Gamma \vdash \langle t, a \rangle : \exists x.\phi}$  $y \not\in FV(\Gamma', \psi, \exists x.\phi)$ 

$$\exists \mathbf{e} \ \frac{\Gamma \vdash a : \exists x. \phi \qquad \Gamma', v : \phi[y/x] \vdash c : \psi}{\Gamma, \Gamma' \vdash \text{let } a = \langle d, e \rangle \text{ in } c[d/y, e/v] : \psi} \quad y \not\in FV(\Gamma)$$

$$\forall \mathbf{i} \ \frac{\Gamma \vdash a : \phi[y/x]}{\Gamma \vdash \lambda y.a : \forall x.\phi} \quad y \not\in FV(\Gamma, \forall x.\phi)$$

$$\forall \mathbf{e} \ \frac{\Gamma \vdash a : \forall x. \phi}{\Gamma \vdash at : \phi[t/x]}$$



Non-Classical Logic Minimal, Intulionistic Logic are examples of Non-Classical Logics. We wish to capture mathematical reasoning. moterial implication, A→B= 7A VB 7A ⊨ A → B  $B \models A \rightarrow B$ this does not capture, conditionalinglish language ANB > C = (A > C) v(B > C), holds for material implication. Il switch A its on, and "Diviteh" B is on, then this implie when A is on, or when B is on, the lights are on. Paracon sistency The idea of paraconsistency is that coherence is possible even without consistency. Put another way, a paraconsistent logician can say that a theory is inconsistent without meaning that the theory is incoherent, or absurd.