

Rules for QL^f Trees

(a) $\neg\neg A \quad \checkmark$
 $\quad |$
 $\quad A$

(b) $(A \wedge B) \quad \checkmark$
 $\quad |$
 $\quad A$
 $\quad B$

(c) $\neg(A \vee B) \quad \checkmark$
 $\quad |$
 $\quad \neg A$
 $\quad \neg B$

(d) $\neg(A \supset B) \quad \checkmark$
 $\quad |$
 $\quad A$
 $\quad \neg B$

(e) $(A \vee B) \quad \checkmark$
 $\quad \wedge$
 $\quad A \quad B$

(f) $\neg(A \wedge B) \quad \checkmark$
 $\quad \wedge$
 $\quad \neg A \quad \neg B$

(g) $(A \supset B) \quad \checkmark$
 $\quad \wedge$
 $\quad \neg A \quad B$

(h) $(A \equiv B) \quad \checkmark$
 $\quad \wedge$
 $\quad A \quad \neg A$
 $\quad B \quad \neg B$

(i) $\neg(A \equiv B) \quad \checkmark$
 $\quad \wedge$
 $\quad A \quad \neg A$
 $\quad \neg B \quad B$

($\neg\forall$) $\neg\forall vC(\dots v\dots v\dots) \quad \checkmark$
 $\quad |$
 $\quad \exists\neg C(\dots v\dots v\dots)$

($\neg\exists$) $\neg\exists vC(\dots v\dots v\dots) \quad \checkmark$
 $\quad |$
 $\quad \forall\neg C(\dots v\dots v\dots)$

(\forall'') $\forall vC(\dots v\dots v\dots)$
 $\quad |$
 $\quad C(\dots c\dots c\dots) \quad [c \text{ old, or unprecedented}]$

(\exists) $\exists vC(\dots v\dots v\dots) \quad \checkmark$
 $\quad |$
 $\quad C(\dots c\dots c\dots) \quad [c \text{ new}]$

(L) $C(m)$
 $m = n \text{ or } n = m$
 $\quad |$
 $\quad C(n)$