$\exists C_0 \dots C_n \ \forall D_1 \dots D_n \ \exists E_1 \dots E_n$

$\phi = C_0$

$c = C_n$

$$\left.\begin{array}{l} C_{k-1} \subseteq C_k \\ C_{k-1} \leq_0^* D_k \Rightarrow \left(D_k \leq_0^* E_k \rightarrow C_k\right) \end{array}\right\} \text{for } k \in \{1, \dots, n\}$$

$\Leftrightarrow \quad \exists C_0 \dots C_n \ \forall D_1 \dots D_n \ \exists E_1 \dots E_n \ \exists F_{10} \dots F_{nn} \ G_{10} \dots G_{nn}$

$\phi = C_0$

$c = C_n$

$C_{k-1} \subseteq C_k$

$$\left(C_{k-1} = F_{k0} \leq_0 F_{k1} \leq \dots \leq F_{kn} = D_k\right)$$
$$\Rightarrow \left(D_k = G_{k0} \leq_0 G_{k1} \leq \dots \leq G_{kn} = E_k \rightarrow C_k\right)$$

$\Leftrightarrow \quad \exists C_0 \dots C_n \ \forall D_1 \dots D_n \ \exists E_1 \dots E_n \ F_{10} \dots F_{nn} \ G_{10} \dots G_{nn}$

$\phi = C_0 \qquad C = C_n \qquad C_{k-1} \subseteq C_k$

$$\left(\begin{array}{ll} C_{k-1} = F_{k0} & F_{k0} \subseteq F_{k1} \subseteq \dots \subseteq F_{kn} \\ F_{kn} = D_k & F_{k0} \rightarrow F_{k1} \rightarrow \dots \rightarrow F_{kn} \end{array} \right)$$

$$\Rightarrow \left(\begin{array}{ll} D_k = G_{k0} & G_{k0} \subseteq G_{k1} \subseteq \dots \subseteq G_{kn} \\ G_{kn} = E_k & \\ E_k \rightarrow C_k & G_{k0} \rightarrow G_{k1} \rightarrow \dots \rightarrow G_{kn} \end{array} \right)$$

for $k \in \{1, \dots, n\}$

$P \wedge Q \Rightarrow R \wedge S$

$\neg P \vee \neg Q \vee R$

$\neg P \vee \neg Q \vee S$

$((a \Rightarrow b) \wedge (b \Rightarrow c))$

$= (a' \Rightarrow b') \wedge (b' \Rightarrow c'))$

~~$a \Rightarrow b$~~

$((\neg a \vee b) \wedge (\neg b \vee c))$

$\Rightarrow ((\neg a' \vee b') \wedge (\neg b' \vee c'))$

$(a \wedge \neg b) \vee (b \wedge \neg c) \vee ((\neg a' \vee b') \wedge (\neg b' \vee c'))$

~~$a \Rightarrow a \Rightarrow a \Rightarrow$~~

$a \vee b \vee \neg a' \vee b'$

$a \vee b \vee \neg b' \vee c'$

$a \vee \neg c \vee \neg a' \vee b'$

$a \vee \neg c \vee \neg b' \vee c'$

~~$\neg b \vee b \vee \ldots$~~

~~$\neg b \vee b \vee \ldots$~~

$\neg b \vee \neg c \vee \neg a' \vee b'$

$\neg b \vee \neg c \vee \neg b' \vee c'$

not Horn

$\neg a$

- $a' \Rightarrow (a \vee b \vee b')$
- $b' \Rightarrow (a \vee b \vee c')$
- $(a' \wedge c) \Rightarrow (a \vee b')$
- $(b' \wedge c) \Rightarrow (a \vee c')$
- $(a' \wedge b \wedge c) \Rightarrow b'$
- $(b' \wedge b \wedge c) \Rightarrow c'$