№2. $\vdash A \lor (B \to C)$ та $\vdash B$, то $\vdash A \lor C$

$\vdash_{дано} A \lor (B \to C) \vdash A \lor (\neg B \lor C) \vdash_{ПК} (\neg B \lor C) \lor A$

$\vdash_{ПА} \neg B \lor (C \lor A)$

$\vdash_{дано} B \vdash_{П1} (C \lor A) \lor B \vdash_{ПК} B \lor (C \lor A) \vdash_{П4} (C \lor A) \lor (C \lor A) \vdash_{П2} (C \lor A)$

$\vdash_{ПК} A \lor C.$

№1. $\{(A \lor D \to C) \to B, \neg A \And \neg D\} \vDash C \And \neg B$

$\{(A \lor \neg D \lor C) \to B, \neg A, \neg D, \neg C \lor B\}$

$\{\neg (A \lor \neg D \lor C) \lor B, \neg A, \neg D, \neg C \lor B\}$

$\{(\neg A, D, \neg C) \lor B, \neg A, \neg D, \neg C \lor B\}$

$\{\neg A \lor B, D \lor B, \neg C \lor B, \neg A, \neg D, \neg C \lor B\}$

Множ. не суперечл. $\Rightarrow$ не вірно.

№3. $\{A \to C, D \to B, A \vee \neg B\} \vdash D \to C$

$\{\neg A \vee C, \neg D \vee B, A \vee \neg B, D \vee \neg C\}$

$C \vee \neg B$

$\neg D \vee C$

0

№4. $\vdash A \to C \qquad \dashv (A \& B) \to C$ $\qquad \boxed{\dashv \to}$

$\boxed{\vdash \to}$ $\quad \dashv A \mid \vdash C \quad \vdash (A \& B), \dashv C$

$\qquad\qquad\qquad\qquad \boxed{\vdash \&}$

$\qquad\qquad\qquad \vdash A, \vdash B, \dashv C$

Дерево незамкнене $\Rightarrow$ не вірно.

Контрприклад: $\quad \tau(A) = T$
$\tau(B) = T$
$\tau(C) = F.$

№5. $\dashv (A \to C) \ominus ((B \to C) \to (A \to B \vee C)).$

$\vdash (A \to C) \qquad \dashv ((B \to C) \ominus (A \to B \vee C))$

$\dashv A \mid \vdash C \mid \vdash (B \ominus C), \dashv (A \to B \vee C)$

$\qquad\qquad\qquad \dashv B, \dashv (A \ominus B \vee C) \mid \vdash C, \dashv (A \ominus B \vee C)$

$\qquad\qquad\qquad \dashv B, \vdash A, \dashv (B \vee C) \mid \vdash C, \vdash A, \dashv (B \vee C)$

$\qquad\quad \dashv B, \vdash A, \dashv B, \vdash C \mid \vdash C, \vdash A, \dashv B, \dashv C$

$\qquad\qquad\qquad\qquad\qquad x$

Дерево не замкнене. Контрприклад: $\tau(A) = T$

$\tau(B) = F$

$\tau(C) = F$