



1.)

$T_C ( \{C1, C2\}, \{C1\} )$

$T_A ( \{A1, A2, C11, Q1\}, \{A1\} )$

$P_W ( \{A1, C1, W1\}, \{A1+C1\} )$

$P_W[A1] \subseteq T_A[A1], T_A[A1] \subseteq P_W[A1], P_W[C1] \subseteq T_C[C1]$

$T_A[C11] \subseteq T_C[C1], \text{dom}(C11) \subseteq \text{dom}(C1), \text{Null}(T_A, C11) = \perp$

$T_B( \{B1, B2\}, \{B1\} )$

$P_X( \{A1, B1, X1\}, \{A1 + B1\} )$

$P_X[A1] \subseteq T_A[A1], P_X[B1] \subseteq T_B[B1], T_B[B1] \subseteq P_X[B1]$

$T_D( \{D1, D2, B1, Z1\}, \{D1\} )$

$T_D[B1] \subseteq T_B[B1], \text{Null}(T_D, B1) = \perp$

$P_D( \{D1, D11, D\}, \{D1 + D11\} )$

$P_D[D1] \subseteq T_D[D1], P_D[D11] \subseteq T_D[D1], \text{dom}(D11) \subseteq \text{dom}(D1)$

$P_Y( \{D1, A1, B1, Y1\}, \{D1 + A1 + B1\} )$

$P_Y[D1] \subseteq T_D[D1], P_Y[A1 + B1] \subseteq P_X[A1 + B1]$

$T_{B1}( \{B1, B11, B12\}, \{B1, B11\} )$

$T_{B2}( \{B1, B21, B22\}, \{B1, B21\} )$

$T_{B1}[B1] \subseteq T_B[B1]$

$T_{B2}[B1] \subseteq T_B[B1]$

$T_B[B1] \subseteq T_{B1}[B1] \cup T_{B2}[B1]$

2.)

$T_A( \{A1, A2\}, \{A1\} )$

$T_C( \{C1, C2, A1\}, \{A1+C1\} )$

$T_C[A1] \subseteq T_A[A1]$

$T_F( \{F1, F2\}, \{F1\} )$

$T_B( \{B1, B2, F11, W1\}, \{B1\} )$

$P_V( \{B1, F1, V1\}, \{B1 + F1\} )$

$T_B[F11] \subseteq T_F[F1], \text{dom}(F11) \subseteq \text{dom}(F1), \text{Null}(T_B, F11) = T$

$P_V[F1] \subseteq T_F[F1], P_V[B1] \subseteq T_B[B1]$

$P_X( \{A1, B1, X1\}, \{A1 + B1\} )$

$P_X[A1] \subseteq T_A[A1], P_X[B1] \subseteq T_B[B1], T_B[B1] \subseteq P_X[B1]$

$T_D( \{D1, D2, B1, Z1\}, \{D1\} )$

$P_Y( \{D1, A1, B1, Y1\}, \{A1 + B1 + D1\} )$

$T_D[B1] \subseteq T_B[B1], \text{Null}(T_D, B1) = \perp$

$P_Y[D1] \subseteq T_D[D1], P_Y[A1 + B1] \subseteq P_X[A1 + B1]$

$T_E( \{E1, E2, E11, S1\}, \{E1\} )$

$T_E[E11] \subseteq T_E[E1], \text{dom}(E11) \subseteq \text{dom}(E1), \text{Null}(T_E, E11) = T$

$T_{D1}( \{D11, D12, D1\}, \{D1, D11\} )$

$T_{D2}( \{D21, D22, D1, E1\}, \{D1, D21\} )$

$T_{D1}[D1] \subseteq T_D[D1], T_{D2}[D1] \subseteq T_D[D1], T_D[D1] \subseteq T_{D1}[D1] \cup T_{D2}[D1]$

$T_{D2}[E1] \subseteq T_E[E1], \text{Null}(T_{D2}, E1) = \perp$