

t41_graph_5

(TMQ6x7Qk4pT91YUPvSGPYCDD2AcruqTbuvd)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_graph_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v2_struct_0 X2) \wedge (l1_graph_1 \\
& X2)) \Rightarrow (\forall X3. (m2_finseq_1 X3 (u4_struct_0 X2)) \Rightarrow (\forall X4. \\
& (m2_finseq_1 X4 (u4_struct_0 X2)) \Rightarrow (((r1_tarski (k10_xtuple_0 \\
& X3) (k10_xtuple_0 X4)) \wedge (r1_tarski (k7_subset_1 (u1_struct_0 \\
& X2) (k2_graph_5 X2 X4) X0) X1)) \Rightarrow (r1_tarski (k7_subset_1 (u1_struct_0 \\
& X2) (k2_graph_5 X2 X3) X0) X1))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m2_graph_1 X1 X0) \Rightarrow (m2_finseq_1 X1 (u4_struct_0 X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3. k5_graph_5 X0 X1 X2 X3 = ReplSep (\\
& toset (\lambda X4 : \iota. (v7_graph_1 X4 X0) \wedge ((v1_graph_4 X4 X0) \wedge (m2_graph_1 \\
& X4 X0)))) (\lambda X4 : \iota. r4_graph_5 X0 X4 X1 X2 X3) (\lambda X4 : \iota. X4))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X4.(r4_graph_5 X0 X1 X2 X3 X4) \Leftrightarrow ((v1_graph_4 X1 X0) \wedge \\ & (r2_graph_5 X0 X2 X3 X1 X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X3.((v7_graph_1 X3 X0) \wedge (m2_graph_1 \\ & X3 X0)) \Rightarrow (\forall X4.(r2_graph_5 X0 X1 X2 X3 X4) \Leftrightarrow ((r1_graph_5 X0 \\ & X3 X1 X2) \wedge (r1_tarSKI (k7_subset_1 (u1_struct_0 X0) (k2_graph_5 \\ & X0 X3) (k1_tarSKI X2)) X4)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarSKI X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow ((r1_graph_5 X0 X1 X2 X3) \Leftrightarrow ((X1 \neq k1_xboole_0) \wedge ((k1_funct_1 \\ & (u1_graph_1 X0) (k1_funct_1 X1 np_1) = X2) \wedge (k1_funct_1 (u2_graph_1 \\ & X0) (k1_funct_1 X1 (k3_finseq_1 X1)) = X3)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (k6_graph_5 X0 X1 = ReplSep \\ & (toset (\lambda X2 : \iota. (v7_graph_1 X2 X0) \wedge ((v1_graph_4 X2 X0) \wedge (m2_graph_1 \\ & X2 X0)))) (\lambda X2 : \iota. (X2 \neq k1_xboole_0) \wedge ((k1_funct_1 (u1_graph_1 \\ & X0) (k1_funct_1 X2 np_1) = k1_funct_1 (u1_graph_1 X0) (k1_funct_1 \\ & X1 np_1)) \wedge ((k1_funct_1 (u2_graph_1 X0) (k1_funct_1 X2 (k3_finseq_1 \\ & X2)) = k1_funct_1 (u2_graph_1 X0) (k1_funct_1 X1 (k3_finseq_1 X1))) \wedge \\ & (r1_tarSKI (k10_xtuple_0 X2) (k10_xtuple_0 X1)))) (\lambda X2 : \iota. \\ & X2))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\\ & \forall X2. (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (u1_struct_0 X1)) \Rightarrow (\forall X4. ((v7_graph_1 X4 X1) \wedge (m2_graph_1 \\ & X4 X1)) \Rightarrow ((r2_graph_5 X1 X2 X3 X4 X0) \Rightarrow (r1_tarSKI (k6_graph_5 X1 X4) \\ & (k5_graph_5 X1 X2 X3 X0)))))) \end{aligned}$$