

t37_graph_3 (TMHM- Fjf6wEBV3p376w2mRiR6HQzAui3GYaG)

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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 $m1_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_graph_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_graph_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v1_graph_1 : \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_tarski\ X0\ (k2_xboole_0\ X0\ X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge (l1_graph_1\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2. (m1_subset_1\ X2 \\ & (u1_struct_0\ X0)) \Rightarrow (\forall X3. (m1_graph_1\ X3\ X0) \Rightarrow (\forall X4. \\ & (m2_finseq_1\ X4\ (u1_struct_0\ X0)) \Rightarrow (\forall X5. (m2_finseq_1\ X5 \\ & (u1_struct_0\ (k8_graph_3\ X0\ X1\ X2))) \Rightarrow (((X5 = X4) \wedge (r1_graph_2\ X0 \\ & X4\ X3)) \Rightarrow (r1_graph_2\ (k8_graph_3\ X0\ X1\ X2)\ X5\ X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski\ X0\ X1) \wedge (r1_tarski\ X1\ X2)) \Rightarrow (r1_tarski\ X0\ X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1\ X1\ X0) \Leftrightarrow (m1_finseq_1\ X1\ X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge (l1_graph_1\ X0)) \Rightarrow (\forall X1. \\ & (m1_graph_1\ X1\ X0) \Rightarrow ((v1_relat_1\ X1) \wedge ((v1_funct_1\ X1) \wedge (v1_finseq_1 \\ & X1)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_graph_1 \\ & X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 \\ & X0))))\Rightarrow((\neg v2_struct_0 (k8_graph_3 X0 X1 X2))\wedge((v1_graph_1 (k8_graph_3 \\ & X0 X1 X2))\wedge(l1_graph_1 (k8_graph_3 X0 X1 X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\Rightarrow(\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0))\Rightarrow(\forall X3.((\neg v2_struct_0 X3)\wedge((v1_graph_1 \\ & X3)\wedge(l1_graph_1 X3)))\Rightarrow((X3 = k8_graph_3 X0 X1 X2)\Leftrightarrow((u1_struct_0 \\ & X3 = u1_struct_0 X0)\wedge((u4_struct_0 X3 = k2_xboole_0 (u4_struct_0 \\ & X0) (k1_tarski (u4_struct_0 X0)))\wedge((u1_graph_1 X3 = k1_funct_4 \\ & (u1_graph_1 X0) (k16_funcop_1 (u4_struct_0 X0) X1))\wedge(u2_graph_1 \\ & X3 = k1_funct_4 (u2_graph_1 X0) (k16_funcop_1 (u4_struct_0 X0) \\ & X2)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 \\ & X1)))\Rightarrow((m1_finseq_1 X1 X0)\Leftrightarrow(r1_tarski (k10_xtuple_0 X1) X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\Rightarrow(\forall X1. \\ & ((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1)))\Rightarrow((m1_graph_1 \\ & X1 X0)\Leftrightarrow((m2_finseq_1 X1 (u4_struct_0 X0))\wedge(\exists X2.(m2_finseq_1 \\ & X2 (u1_struct_0 X0))\wedge(r1_graph_2 X0 X2 X1)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\Rightarrow(\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0))\Rightarrow(\forall X3.(m1_graph_1 X3 X0)\Rightarrow(m1_graph_1 \\ & X3 (k8_graph_3 X0 X1 X2)))))) \end{aligned}$$