

t20_graph_1
(TMQP2U9QVL5D83kyFr695CpEk63DWd1Xqh)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $r4_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r1_tarSKI : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow ((r4_graph_1 X0 X1) \Rightarrow ((r1_relset_1 \\ & (u4_struct_0 X0) (u1_struct_0 X0) (u1_graph_1 X0) (u1_graph_1 \\ & X1)) \wedge (r1_relset_1 (u4_struct_0 X0) (u1_struct_0 X0) (u2_graph_1 \\ & X0) (u2_graph_1 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge \\ & (v1_funct_1 X2)) \Rightarrow (((r1_tarSKI X0 X2) \wedge (r1_tarSKI X1 X2)) \Rightarrow (r1_partfun1 \\ & X0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (((r1_partfun1 (u1_graph_1 \\ & X0) (u1_graph_1 X1)) \wedge (r1_partfun1 (u2_graph_1 X0) (u2_graph_1 \\ & X1))) \Rightarrow ((r4_graph_1 X0 (k5_graph_1 X0 X1)) \wedge (r4_graph_1 X1 (k5_graph_1 \\ & X0 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((r1_relset_1 X0 X1 X2 X3)\Leftrightarrow(r1_tarski X2 X3)) \quad (4)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow((v1_funct_1 (u2_graph_1 X0))\wedge((v1_funct_2 (u2_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0))\wedge(m1_subset_1 (u2_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (5)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow((v1_funct_1 (u1_graph_1 X0))\wedge((v1_funct_2 (u1_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (7)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge(l1_graph_1 X1))\Rightarrow((\exists X2.((\neg v2_struct_0 X2)\wedge(l1_graph_1 X2))\wedge((r4_graph_1 X0 X2)\wedge(r4_graph_1 X1 X2)))\Rightarrow((r4_graph_1 X0 (k5_graph_1 X0 X1))\wedge(r4_graph_1 X1 (k5_graph_1 X0 X1))))))$$