

t22_graph_1
(TMcrYtacqURb5V7EmM8gxxFw3k3pxTtg8qg)

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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 $r1_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ 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. Let $v1_graph_1 : \iota \Rightarrow o$ be given. Let $g1_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\forall X2.((\neg v2_struct_0 \\ & X2) \wedge (l1_graph_1 X2)) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge (l1_graph_1 \\ & X3)) \Rightarrow (((r4_graph_1 X0 X1) \wedge (r4_graph_1 X2 X1) \wedge (r1_graph_1 X3 \\ & X0 X2)) \Rightarrow (r4_graph_1 X3 X1)))))) \end{aligned} \tag{3}$$

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.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow((v1_funct_1 (u2_graph_1 X0))\wedge((v1_funct_2 (u2_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0))\wedge(m1_subset_1 (u2_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow((v1_funct_1 (u1_graph_1 X0))\wedge((v1_funct_2 (u1_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\wedge(((\neg v2_struct_0 X1)\wedge(l1_graph_1 X1)))\Rightarrow((\neg v2_struct_0 (k5_graph_1 X0 X1))\wedge((v1_graph_1 (k5_graph_1 X0 X1))\wedge(l1_graph_1 (k5_graph_1 X0 X1)))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_graph_1 X0))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge(l1_graph_1 X1))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(l1_graph_1 X2))\Rightarrow((r1_graph_1 X0 X1 X2)\Leftrightarrow((r1_partfun1 (u2_graph_1 X1) (u2_graph_1 X2))\wedge((r1_partfun1 (u1_graph_1 X1) (u1_graph_1 X2))\wedge(g1_graph_1 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0) = k5_graph_1 X1 X2)))))) \quad (9)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_relat_1 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow((v1_graph_1 X0)\Rightarrow(X0 = g1_graph_1 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0))) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\forall X2.((\neg v2_struct_0 \\ & X2) \wedge (l1_graph_1 X2)) \Rightarrow (((r4_graph_1 X0 X1) \wedge (r4_graph_1 X2 X1)) \Rightarrow \\ & (r4_graph_1 (k5_graph_1 X0 X2) X1)))) \end{aligned}$$