

t48_graph_3
(TMURx6b3Tzk51KkcWqa634LWpisaQsDF4Cw)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_graph_1 : \iota \Rightarrow o$ 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 $k8_graph_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_graph_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_graph_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_graph_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_graph_1 : \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\\ & \forall X2. (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (u1_struct_0 X1)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\ & X1)) \Rightarrow (\forall X5. (m1_subset_1 X5 (u1_struct_0 (k8_graph_3 X1 \\ & X4 X2))) \Rightarrow ((X5 = X3) \Rightarrow ((X3 = X4) \vee (k3_graph_3 (k8_graph_3 X1 X4 X2) \\ & X5 X0 = k3_graph_3 X1 X3 X0))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\\ & \forall X2. (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (u1_struct_0 X1)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\ & X1)) \Rightarrow (\forall X5. (m1_subset_1 X5 (u1_struct_0 (k8_graph_3 X1 \\ & X2 X4))) \Rightarrow ((X5 = X3) \Rightarrow ((X3 = X4) \vee (k2_graph_3 (k8_graph_3 X1 X2 X4) \\ & X5 X0 = k2_graph_3 X1 X3 X0))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v6_graph_1 \\ & X0) \wedge (l1_graph_1 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 \\ & X2 (u1_struct_0 X0)))) \Rightarrow ((\neg v2_struct_0 (k8_graph_3 X0 X1 X2)) \wedge \\ & ((v1_graph_1 (k8_graph_3 X0 X1 X2)) \wedge (v6_graph_1 (k8_graph_3 X0 \\ & X1 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_graph_1 \\ & X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 \\ & X0))))\Rightarrow((\neg v2_struct_0 (k8_graph_3 X0 X1 X2))\wedge((v1_graph_1 (k8_graph_3 \\ & X0 X1 X2))\wedge(l1_graph_1 (k8_graph_3 X0 X1 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v6_graph_1 X0)\wedge(l1_graph_1 \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ & k7_graph_3 X0 X1 X2 = k2_nat_1 (k5_card_1 (k2_graph_3 X0 X1 X2)) (\\ & k5_card_1 (k3_graph_3 X0 X1 X2)))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge((v6_graph_1 X1)\wedge(\\ & l1_graph_1 X1)))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X1))\Rightarrow \\ & (\forall X3.(m1_subset_1 X3 (u1_struct_0 X1))\Rightarrow(\forall X4.(m1_subset_1 \\ & X4 (u1_struct_0 X1))\Rightarrow(\forall X5.(m1_subset_1 X5 (u1_struct_0 \\ & (k8_graph_3 X1 X3 X4))\Rightarrow((X5 = X2)\Rightarrow((X2 = X3)\vee((X2 = X4)\vee(k7_graph_3 \\ & (k8_graph_3 X1 X3 X4) X5 X0 = k7_graph_3 X1 X2 X0)))))))) \end{aligned}$$