

t26_graph_1 (TMWgu- vLqWG2ggwkHdDpWEVxr5ZaTSEo3qMY)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $v3_graph_1 : \iota \Rightarrow o$ be given. Let $r4_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. (m3_graph_1 X1 X0) \Rightarrow ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow ((v3_graph_1 \\ & X0) \Leftrightarrow (\forall X1. \forall X2. ((X1 \in u4_struct_0 X0) \wedge (X2 \in u4_struct_0 \\ & X0)) \Rightarrow (((\neg(k1_funct_1 (u1_graph_1 X0) X1 = k1_funct_1 (u1_graph_1 \\ & X0) X2)) \wedge (k1_funct_1 (u2_graph_1 X0) X1 = k1_funct_1 (u2_graph_1 \\ & X0) X2)) \wedge (\neg(k1_funct_1 (u1_graph_1 X0) X1 = k1_funct_1 (u2_graph_1 \\ & X0) X2)) \wedge (k1_funct_1 (u1_graph_1 X0) X2 = k1_funct_1 (u2_graph_1 \\ & X0) X1)))) \vee (X1 = X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow ((r4_graph_1 X0 X1) \Leftrightarrow (m3_graph_1 \\ & X0 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow ((m3_graph_1 X1 X0) \Leftrightarrow ((r1_tarski \\ & (u1_struct_0 X1) (u1_struct_0 X0)) \wedge ((r1_tarski (u4_struct_0 \\ & X1) (u4_struct_0 X0)) \wedge (\forall X2. (X2 \in u4_struct_0 X1) \Rightarrow ((k1_funct_1 \\ & (u1_graph_1 X1) X2 = k1_funct_1 (u1_graph_1 X0) X2) \wedge ((k1_funct_1 \\ & (u2_graph_1 X1) X2 = k1_funct_1 (u2_graph_1 X0) X2) \wedge ((k1_funct_1 \\ & (u1_graph_1 X0) X2 \in u1_struct_0 X1) \wedge (k1_funct_1 (u2_graph_1 X0) \\ & X2 \in u1_struct_0 X1)))))))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge ((v3_graph_1 X1) \wedge (l1_graph_1 X1))) \Rightarrow ((r4_graph_1 \\ & X0 X1) \Rightarrow (v3_graph_1 X0))) \end{aligned}$$