

t32_graph_1 (TMFTZHXP-
KNx5vUtmSJD2HoYxU2bNKtNo7SA)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_graph_1 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $r1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_graph_1 : \iota \Rightarrow \iota$ be given. Let $k5_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r4_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (r1_tarski (k1_tarski X0) X1) \Leftrightarrow (X0 \in X1) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v1_graph_1 X0) \wedge (l1_graph_1 X0))) \Rightarrow (r1_tarski (k1_tarski X0) (k11_graph_1 X0)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v1_graph_1 X1) \wedge (l1_graph_1 X1)))) \Rightarrow ((X1 \in k11_graph_1 X0) \Leftrightarrow (r4_graph_1 X1 X0)) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (((r1_partfun1 (u1_graph_1 X0) (u1_graph_1 X1)) \wedge (r1_partfun1 (u2_graph_1 X0) (u2_graph_1 X1))) \Rightarrow (((k5_graph_1 X0 X1 \neq X1) \wedge (k5_graph_1 X1 X0 \neq X1)) \vee (r4_graph_1 X0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (((r1_partfun1 (u1_graph_1 \\ & X0) (u1_graph_1 X1)) \wedge (r1_partfun1 (u2_graph_1 X0) (u2_graph_1 \\ & X1))) \Rightarrow ((r4_graph_1 X0 (k5_graph_1 X0 X1)) \wedge (r4_graph_1 X1 (k5_graph_1 \\ & X0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_graph_1 X0) \wedge (l1_graph_1 \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_graph_1 X1) \wedge (l1_graph_1 \\ & X1))) \Rightarrow (((r4_graph_1 X0 X1) \wedge (r4_graph_1 X1 X0)) \Rightarrow (X0 = X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \wedge \\ & ((\neg v2_struct_0 X1) \wedge (l1_graph_1 X1))) \Rightarrow ((\neg v2_struct_0 (k5_graph_1 \\ & X0 X1)) \wedge ((v1_graph_1 (k5_graph_1 X0 X1)) \wedge (l1_graph_1 (k5_graph_1 \\ & X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k2_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_graph_1 X0) \wedge (l1_graph_1 \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_graph_1 X1) \wedge (l1_graph_1 \\ & X1))) \Rightarrow (\neg (r1_partfun1 (u1_graph_1 X0) (u1_graph_1 X1)) \wedge (r1_partfun1 \\ & (u2_graph_1 X0) (u2_graph_1 X1)) \wedge ((r1_tarski (k11_graph_1 (k5_graph_1 \\ & X0 X1)) (k2_xboole_0 (k11_graph_1 X0) (k11_graph_1 X1))) \wedge ((\neg r4_graph_1 \\ & X0 X1) \wedge (\neg r4_graph_1 X1 X0)))))) \end{aligned}$$