

t16_graphsp
(TMWxk9geKvyzC89eP1gAhHz4ZAimRHJ1Zdh)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_graph_1 : \iota \Rightarrow o$ be given. Let $v6_graph_1 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_graph_5 : \iota$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_graph_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r7_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (\forall X2. \forall X3. \\
& \forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 (u1_struct_0 X0)) \Rightarrow (((u1_struct_0 X0 = k2_xboole_0 X2 X3) \wedge ((\\
& X4 \in X2) \wedge (\forall X6.(m1_subset_1 X6 (u1_struct_0 X0)) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (u1_struct_0 X0)) \Rightarrow (((X6 \in X2) \wedge (X7 \in X3)) \Rightarrow (\forall X8. \\
& \neg (X8 \in u4_struct_0 X0) \wedge (r1_graph_4 X0 X6 X7 X8)))))) \wedge (r1_graph_5 \\
& X0 X1 X4 X5))) \Rightarrow (r2_graph_5 X0 X4 X5 X1 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.((v7_graph_1 X3 X0) \wedge (m2_graph_1 \\
& X3 X0)) \Rightarrow (\forall X4.(r2_graph_5 X0 X1 X2 X3 X4) \Leftrightarrow ((r1_graph_5 X0 \\
& X3 X1 X2) \wedge (r1_tarski (k7_subset_1 (u1_struct_0 X0) (k2_graph_5 \\
& X0 X3) (k1_tarski X2)) X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.((v7_graph_1 X3 X0) \wedge (m2_graph_1 \\
& X3 X0)) \Rightarrow (\forall X4.\forall X5.((v1_relat_1 X5) \wedge (v1_funct_1 \\
& X5)) \Rightarrow ((r8_graph_5 X0 X1 X2 X3 X4 X5) \Leftrightarrow ((r2_graph_5 X0 X1 X2 X3 X4) \wedge \\
& (\forall X6.((v7_graph_1 X6 X0) \wedge (m2_graph_1 X6 X0)) \Rightarrow ((r2_graph_5 \\
& X0 X1 X2 X6 X4) \Rightarrow (r1_xxreal_0 (k10_graph_5 X0 X3 X5) (k10_graph_5 \\
& X0 X6 X5))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.((v7_graph_1 X3 X0) \wedge (m2_graph_1 \\
& X3 X0)) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow ((r7_graph_5 \\
& X0 X1 X2 X3 X4) \Leftrightarrow ((r1_graph_5 X0 X3 X1 X2) \wedge (\forall X5.((v7_graph_1 \\
& X5 X0) \wedge (m2_graph_1 X5 X0)) \Rightarrow ((r1_graph_5 X0 X5 X1 X2) \Rightarrow (r1_xxreal_0 \\
& (k10_graph_5 X0 X3 X4) (k10_graph_5 X0 X5 X4))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v2_struct_0 X2) \wedge ((v2_graph_1 \\
& X2) \wedge ((v6_graph_1 X2) \wedge (l1_graph_1 X2)))) \Rightarrow (\forall X3.((v7_graph_1 \\
& X3 X2) \wedge (m2_graph_1 X3 X2)) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 (u4_struct_0 X2) k8_graph_5) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u4_struct_0 X2) k8_graph_5)))))) \Rightarrow (\forall X5.(\\
& m1_subset_1 X5 (u1_struct_0 X2)) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
& (u1_struct_0 X2)) \Rightarrow (((u1_struct_0 X2 = k2_xboole_0 X0 X1) \wedge ((X5 \in \\
& X0) \wedge (\forall X7.(m1_subset_1 X7 (u1_struct_0 X2)) \Rightarrow (\forall X8. \\
& (m1_subset_1 X8 (u1_struct_0 X2)) \Rightarrow (((X7 \in X0) \wedge (X8 \in X1)) \Rightarrow (\forall X9. \\
& \neg (X9 \in u4_struct_0 X2) \wedge (r1_graph_4 X2 X7 X8 X9)))))) \Rightarrow ((r8_graph_5 \\
& X2 X5 X6 X3 X0 X4) \Leftrightarrow (r7_graph_5 X2 X5 X6 X3 X4))))))
\end{aligned}$$