

t3_msscyc_2 (TMWD- MYa7YEhDZA4LbqcVE2ERz2Cwne7jRoa)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v5_msafree2 : \iota \Rightarrow o$ be given. Let $v3_msscyc_1 : \iota \Rightarrow o$ be given. Let $k4_msscyc_2 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $k3_msscyc_2 : \iota \Rightarrow \iota$ be given. Let $k1_msscyc_2 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_msscyc_2 : \iota \Rightarrow \iota$ be given. Let $v1_graph_1 : \iota \Rightarrow o$ be given. Let $k4_tarSKI : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k13_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_finset_1 : \iota \Rightarrow o$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_msafree : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X1 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 X0)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (\forall X4. \forall X5. \\ & \forall X6. \forall X7. (g1_graph_1 X0 X1 X2 X3 = g1_graph_1 X4 X5 X6 \\ & X7) \Rightarrow ((X0 = X4) \wedge ((X1 = X5) \wedge ((X2 = X6) \wedge (X3 = X7)))))) \end{aligned} \quad (2)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u4_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (v1_xboole_0 (u4_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow (l5_struct_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow ((\neg v2_struct_0 (k4_msscyc_2 X0)) \wedge (l1_graph_1 (k4_msscyc_2 X0))) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow & ((v1_funct_1 (k3_msscyc_2 X0)) \wedge \\ & ((v1_funct_2 (k3_msscyc_2 X0) (k1_msscyc_2 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (k3_msscyc_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k1_msscyc_2 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow & ((v1_funct_1 (k2_msscyc_2 X0)) \wedge \\ & ((v1_funct_2 (k2_msscyc_2 X0) (k1_msscyc_2 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (k2_msscyc_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k1_msscyc_2 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3. & (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X1 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 X0)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow ((v1_graph_1 (g1_graph_1 \\ & X0 X1 X2 X3)) \wedge (l1_graph_1 (g1_graph_1 X0 X1 X2 X3))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. & ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (k4_msscyc_2 \\ & X0 = g1_graph_1 (u1_struct_0 X0) (k1_msscyc_2 X0) (k2_msscyc_2 \\ & X0) (k3_msscyc_2 X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(X1 = k1_msscyc_2 X0) \Leftrightarrow \\
& \quad (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.\exists X4.(X2 = k4_tarski X3 \\
& X4) \wedge ((X3 \in u4_struct_0 X0) \wedge ((X4 \in u1_struct_0 X0) \wedge (\exists X5. \\
& \quad (v7_ordinal1 X5) \wedge (\exists X6.(m1_subset_1 X6 (k13_finseq_1 (\\
& u1_struct_0 X0))) \wedge ((k1_funct_1 (u1_msualg_1 X0) X3 = X6) \wedge ((X5 \in \\
& \quad k4_finseq_1 X6) \wedge (k1_funct_1 X6 X5 = X4))))))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow ((v5_msafree2 \\
& X0) \Leftrightarrow (\forall X1.((v4_msualg_1 X1 X0) \wedge ((v3_msafree2 X1 X0) \wedge (l3_msualg_1 \\
& \quad X1 X0)))) \Rightarrow (v4_msafree2 X1 X0))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\
& (l3_msualg_1 X1 X0) \Rightarrow ((v4_msafree2 X1 X0) \Leftrightarrow (v2_finset_1 (u3_msualg_1 \\
& \quad X0 X1))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\
& (l3_msualg_1 X1 X0) \Rightarrow (((\neg v11_struct_0 X0) \Rightarrow ((v3_msafree2 X1 X0) \Leftrightarrow \\
& \quad (\forall X2.((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 X2) \wedge (l1_msualg_1 \\
& \quad X2))) \Rightarrow ((X2 = X0) \Rightarrow (\forall X3.(l3_msualg_1 X3 X2) \Rightarrow (\neg (X3 = X1) \wedge \\
& \quad \forall X4.(m1_msafree X4 X2 X3) \Rightarrow (\neg v2_finset_1 X4)))))))))) \wedge ((\\
& v11_struct_0 X0) \Rightarrow ((v3_msafree2 X1 X0) \Leftrightarrow (v2_finset_1 (u3_msualg_1 \\
& \quad X0 X1))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_graph_1 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v11_struct_0 \\
& \quad X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v3_msscyc_1 X0)))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_graph_1 X0) \Rightarrow ((v1_graph_1 X0) \Rightarrow (X0 = g1_graph_1 \\
& (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 \\
& \quad X0)))
\end{aligned} \tag{18}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow ((v5_msafree2 X0) \Leftrightarrow (v3_msscyc_1 (k4_msscyc_2 X0)))
\end{aligned}$$