

t10_msscyc_1
 (TMPbFXJEK4KjBrzE4EwN7bRsicXdj5Yedtq)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k7_graph_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $m2_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_graph_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. (m2_graph_1 X1 X0) \Leftrightarrow (m1_graph_1 X1 X0)) \tag{1}$$

Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. (m1_graph_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1)))) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \wedge ((v7_graph_1 X1 X0) \wedge (m1_graph_1 X1 X0))) \Rightarrow (m2_finseq_1 (k7_graph_2 X0 X1) (u1_struct_0 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& (m2_finseq_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge \\
& ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((r1_graph_2 X0 X1 X2) \Leftrightarrow (\\
& (k3_finseq_1 X1 = k2_nat_1 (k3_finseq_1 X2) np_1) \wedge (\forall X3. \\
& (m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 \\
& X3) \wedge (r1_xxreal_0 X3 (k3_finseq_1 X2))) \Rightarrow (r2_graph_1 X0 (k7_partfun1 \\
& (u1_struct_0 X0) X1 X3) (k7_partfun1 (u1_struct_0 X0) X1 (k2_nat_1 \\
& X3 np_1)) (k1_funct_1 X2 X3))))))))) \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\
& ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow ((X1 \neq k1_xboole_0) \Rightarrow (\\
& \forall X2.(m2_finseq_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 = k7_graph_2 \\
& X0 X1) \Leftrightarrow ((r1_graph_2 X0 X2 X1) \wedge (k1_funct_1 X2 np_1 = k1_funct_1 \\
& (u1_graph_1 X0) (k1_funct_1 X1 np_1))))))))) \tag{6}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_graph_1 \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v7_graph_1 X1 X0) \wedge (m1_graph_1 \\
& X1 X0))) \Rightarrow (k3_finseq_1 (k7_graph_2 X0 X1) = k2_nat_1 (k3_finseq_1 \\
& X1) np_1))
\end{aligned}$$