

t47_rlsb_2 (TMMMsP- KvkC7gKiUgPzsmb9nZeeQ2bSesWmv)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $m1_rlsub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1_rlsub_1 X1 X0) \Rightarrow (\forall X2.(m1_rlsub_1 \\
& X2 X0) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. \\
& (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X7.(m1_subset_1 X7 (u1_struct_0 X0)) \Rightarrow (((r1_rlsub_2 \\
& X0 X1 X2) \wedge ((X3 = k3_rlvect_1 X0 X4 X5) \wedge ((X3 = k3_rlvect_1 X0 X6 X7) \wedge \\
& ((r1_struct_0 X1 X4) \wedge ((r1_struct_0 X1 X6) \wedge ((r1_struct_0 X2 X5) \wedge \\
& (r1_struct_0 X2 X7)))))))))) \Rightarrow ((X4 = X6) \wedge (X5 = X7)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k3_domain_1 X0 X1 \\
& X2 = k2_xtuple_0 X2)
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_domain_1 X0 X1 X2 = k1_xtuple_0 X2) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 X0)\wedge((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge(l1_rlvect_1 X0))))))))))\Rightarrow(\forall X1.(m1_rlsub_1 X1 X0)\Rightarrow(\forall X2.(m1_rlsub_1 X2 X0)\Rightarrow((r1_rlsub_2 X0 X1 X2)\Rightarrow(r1_rlsub_2 X0 X2 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(l1_struct_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0)\Rightarrow(l2_algstr_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 X0)\wedge((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge(l1_rlvect_1 X0))))))))))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge((m1_rlsub_1 X2 X0)\wedge(m1_rlsub_1 X3 X0))))\Rightarrow(m1_subset_1 (k4_rlsub_2 X0 X1 X2 X3) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k3_domain_1 X0 X1 X2) X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k2_domain_1 X0 X1 X2) X0) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 X0)\wedge \\ & ((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge(l1_rlvect_1 X0))))))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow \\ & (\forall X2.(m1_rlsub_1 X2 X0)\Rightarrow(\forall X3.(m1_rlsub_1 X3 X0)\Rightarrow \\ & ((r1_rlsub_2 X0 X2 X3)\Rightarrow(\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))\Rightarrow \\ & ((X4 = k4_rlsub_2 X0 X1 X2 X3)\Leftrightarrow ((X1 = k3_rlvect_1 X0 (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X4) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X4))\wedge((\\ & r1_struct_0 X2 (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X4))\wedge(r1_struct_0 X3 (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X4)))))))))) \quad (12) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2_rlvect_1 X0)\wedge(l1_algstr_0 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k3_rlvect_1 X0 X1 X2 = k3_rlvect_1 X0 X2 X1) \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 X0)\wedge \\ & ((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge(l1_rlvect_1 X0))))))))))\Rightarrow(\forall X1.(m1_rlsub_1 X1 X0)\Rightarrow(\forall X2.(m1_rlsub_1 X2 X0)\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow((r1_rlsub_2 X0 X1 X2)\Rightarrow(k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) (k4_rlsub_2 X0 X3 X1 X2) = k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) (k4_rlsub_2 X0 X3 X2 X1)))))) \end{aligned}$$