

t13_hahnban

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_rlsub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rlvect_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_rlvect_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
 & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
 & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
 & X0)))))))))) \Rightarrow (\forall X1. (m1_rlsub_1 X1 X0) \Rightarrow (\forall X2. (m1_rlsub_1 \\
 & X2 X0) \Rightarrow ((r1_rlsub_2 X0 X1 X2) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\
 & X0)) \Rightarrow ((r1_struct_0 X1 X3) \Rightarrow (k4_rlsub_2 X0 X3 X1 X2 = k1_domain_1 \\
 & (u1_struct_0 X0) (u1_struct_0 X0) X3 (k4_struct_0 X0)))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
 & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
 & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
 & X0)))))))))) \Rightarrow (\forall X1. (m1_rlsub_1 X1 X0) \Rightarrow (k4_struct_0 X1 = \\
 & k4_struct_0 X0))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X2.(m1_rlsub_1 X2 X0) \Rightarrow ((\neg r1_struct_0 X2 X1) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 \\
& (k6_domain_1 (u1_struct_0 X0) X1)))))) \Rightarrow (\forall X4.(m1_rlsub_1 \\
& X4 (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 \\
& X0) X1)))) \Rightarrow (((X1 = X3) \wedge (X4 = X2)) \Rightarrow (r1_rlsub_2 (k1_rlsub_2 X0 X2 \\
& (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 X0) X1))) X4 (k1_rlvect_3 \\
& (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 X0) \\
& X1))) (k6_domain_1 (u1_struct_0 (k1_rlsub_2 X0 X2 (k1_rlvect_3 \\
& X0 (k6_domain_1 (u1_struct_0 X0) X1)))) X3)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\
& (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\
& (u1_struct_0 X0))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1_rlsub_1 X1 X0) \Rightarrow ((\neg v2_struct_0 \\
& X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge \\
& ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 \\
& X1) \wedge ((v8_rlvect_1 X1) \wedge (l1_rlvect_1 X1)))))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1_rlvect_1 X0) \Rightarrow (l2_algstr_0 X0)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1_algstr_0 X0) \Rightarrow (l1_struct_0 X0)
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow (m1_subset_1 (k6_domain_1 X0 X1) (k1_zfmisc_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\ & ((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 \\ & X0)\wedge((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge \\ & (l1_rlvect_1 X0))))))))))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))))\Rightarrow((v1_rlvect_1 (k1_rlvect_3 X0 X1))\wedge(m1_rlsub_1 (k1_rlvect_3 \\ & X0 X1) X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 \\ & X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge \\ & ((v5_rlvect_1 X0)\wedge((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 \\ & X0)\wedge(l1_rlvect_1 X0))))))))))\wedge(m1_rlsub_1 X1 X0)\wedge(m1_rlsub_1 \\ & X2 X0))\Rightarrow((v1_rlvect_1 (k1_rlsub_2 X0 X1 X2))\wedge(m1_rlsub_1 (k1_rlsub_2 \\ & X0 X1 X2) X0)) \end{aligned} \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\ & X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v5_rlvect_1 X0)\wedge \\ & ((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 X0)\wedge(l1_rlvect_1 \\ & X0))))))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow \\ & (\forall X2.(m1_rlsub_1 X2 X0)\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 X0) \\ & X1))))\Rightarrow(\forall X4.(m1_rlsub_1 X4 (k1_rlsub_2 X0 X2 (k1_rlvect_3 \\ & X0 (k6_domain_1 (u1_struct_0 X0) X1))))\Rightarrow(((X1 = X3)\wedge(X2 = X4))\Rightarrow \\ & ((r1_struct_0 X2 X1)\vee(\forall X5.(m1_subset_1 X5 (u1_struct_0 \\ & (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 X0) \\ & X1))))\Rightarrow((r1_struct_0 X2 X5)\Rightarrow(k4_rlsub_2 (k1_rlsub_2 X0 X2 (k1_rlvect_3 \\ & X0 (k6_domain_1 (u1_struct_0 X0) X1))) X5 X4 (k1_rlvect_3 (k1_rlsub_2 \\ & X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 X0) X1))) (k6_domain_1 \\ & (u1_struct_0 (k1_rlsub_2 X0 X2 (k1_rlvect_3 X0 (k6_domain_1 (u1_struct_0 \\ & X0) X1)))) X3)) = k1_domain_1 (u1_struct_0 (k1_rlsub_2 X0 X2 (k1_rlvect_3 \\ & X0 (k6_domain_1 (u1_struct_0 X0) X1)))) (u1_struct_0 X0) X5 (k4_struct_0 \\ & X0)))))))))) \end{aligned}$$