

t4_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 $m1_rlsub.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rlsub.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $k4_rlsub.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_struct.0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_domain.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_domain.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $k3_rlvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (k1_xtuple.0 (k4_tarski X0 X1) = X0) \wedge (k2_xtuple.0 (k4_tarski X0 X1) = X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole.0 X0) \wedge ((\neg v1_xboole.0 X1) \wedge (m1_subset.1 X2 (k2_zfmisc.1 X0 X1)))) \Rightarrow (k3_domain.1 X0 X1 X2 = k2_xtuple.0 X2) \quad (2)$$

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.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole.0 X0) \wedge ((\neg v1_xboole.0 X1) \wedge ((m1_subset.1 X2 X0) \wedge (m1_subset.1 X3 X1)))) \Rightarrow (k1_domain.1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (4)$$

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.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2. (m1_rlsub_1 X2 X0) \Rightarrow (\forall X3. (m1_rlsub_1 X3 X0) \Rightarrow \\ & ((r1_rlsub_2 X0 X2 X3) \Rightarrow (\forall X4. (m1_subset_1 X4 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0))) \Rightarrow ((X4 = k4_rlsub_2 X0 X1 X2 X3) \Leftrightarrow \\ & ((X1 = k3_rlvect_1 X0 (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0) X4) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X4)) \wedge ((\\ & r1_struct_0 X2 (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) \\ & X4)) \wedge (r1_struct_0 X3 (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0) X4)))))))))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_rlsub_1 X1 X0) \Rightarrow (\forall X2.(m1_rlsub_1 \\ & X2 X0) \Rightarrow ((r1_rlsub_2 X0 X1 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5. \\ & (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow ((k4_rlsub_2 X0 X3 X1 X2 = k1_domain_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0) X4 X5) \Rightarrow ((r1_struct_0 X1 X4) \wedge \\ & (r1_struct_0 X2 X5)))))))))) \end{aligned}$$