

l14_o_ring_1

(TMTzP4Sm8r1ZRTSPWbAUtTwhBp9dVWqRrXd)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_o_ring_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_o_ring_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ 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 $k1_xboole_0 : \iota$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v13_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\neg(r1_xxreal_0\ X0\ np_1) \wedge ((X0 \neq k6_numbers) \wedge (X0 \neq np_1))) \quad (1)$$

Assume the following.

$$((v2_xxreal_0\ np_1) \wedge (m2_subset_1\ np_1\ k1_numbers\ k5_numbers)) \wedge ((m1_subset_1\ np_1\ k5_numbers) \wedge (m1_subset_1\ np_1\ k1_numbers)) \quad (2)$$

Assume the following.

$$r1_xxreal_0\ np_1\ np_1 \quad (3)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (4)$$

Assume the following.

$$\exists X0.(l2_struct_0\ X0) \wedge ((\neg v2_struct_0\ X0) \wedge (v7_struct_0\ X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m2_finseq_1 X2 \\ (u1_struct_0 X0)) \Rightarrow ((X2 = k12_finseq_1 (u1_struct_0 X0) X1) \Leftrightarrow ((\\ k3_finseq_1 X2 = np_1) \wedge (k7_partfun1 (u1_struct_0 X0) X2 np_1 = \\ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m2_finseq_1 (k12_finseq_1 X0 X1) X0) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ (m2_finseq_1 X1 (u1_struct_0 X0)) \Rightarrow ((v4_oring_1 X1 X0) \Leftrightarrow ((k3_finseq_1 \\ X1 \neq k6_numbers) \wedge ((v1_oring_1 (k7_partfun1 (u1_struct_0 X0) \\ X1 np_1) X0) \wedge (\forall X2.(v7_ordinal1 X2) \Rightarrow (\neg (X2 \neq k6_numbers) \wedge \\ ((\neg r1_xxreal_0 (k3_finseq_1 X1) X2) \wedge (\forall X3.(m1_subset_1 \\ X3 (u1_struct_0 X0)) \Rightarrow (\neg (v1_oring_1 X3 X0) \wedge (k7_partfun1 (u1_struct_0 \\ X0) X1 (k1_nat_1 X2 np_1) = k6_algstr_0 X0 (k7_partfun1 (u1_struct_0 \\ X0) X1 X2) X3)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow ((r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 k1_xboole_0) \Rightarrow (v2_struct_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v1_xreal_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 np_1) \Rightarrow ((-v2_struct_0 X0) \wedge (v7_struct_0 X0))) \quad (18)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (((-v2_struct_0 X0) \wedge (v7_struct_0 X0)) \Rightarrow (v13_struct_0 X0 np_1)) \quad (19)$$

Theorem 1

$$\forall X0.((-v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v1_o_ring_1 X1 X0) \Rightarrow (v4_o_ring_1 (k12_finseq_1 (u1_struct_0 X0) X1) X0)))$$