

t15_nat_lat (TM-
NtW9rJNKqnnHCr3FwGhcT8w2LsaPEYxDM)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $m2_nat_lat : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k1_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 X0 \tag{1}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow ((u2_lattices X0 = k1_realset1 (u2_lattices X0) (u1_struct_0 X0)) \wedge (u1_lattices X0 = k1_realset1 (u1_lattices X0) (u1_struct_0 X0))) \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge (l3_lattices X1))) \Rightarrow ((m2_nat_lat X1 X0) \Leftrightarrow ((r1_tarski (u1_struct_0 X1) (u1_struct_0 X0)) \wedge ((u2_lattices X1 = k1_realset1 (u2_lattices X0) (u1_struct_0 X1)) \wedge (u1_lattices X1 = k1_realset1 (u1_lattices X0) (u1_struct_0 X1)))))) \tag{3}$$

Theorem 1

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (m2_nat_lat X0 X0)$$