

l5_real_lat

(TMN2WEdseboefdpTVn6xEgwhtQFgz3iWozA)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_real_lat : \iota$ be given. Let $k1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (k4_xxreal_0 (k4_xxreal_0 X0 X1) X2 = k4_xxreal_0 \\ & X0 (k4_xxreal_0 X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 k3_real_lat)) \wedge \\ & (m1_subset_1 X1 (u1_struct_0 k3_real_lat))) \Rightarrow (k1_lattices k3_real_lat \\ & X0 X1 = k4_xxreal_0 X0 X1) \end{aligned} \tag{2}$$

Assume the following.

$$(\neg v2_struct_0 k3_real_lat) \wedge (v3_lattices k3_real_lat) \tag{3}$$

Assume the following.

$$v3_membered (u1_struct_0 k3_real_lat) \tag{4}$$

Assume the following.

$$\forall X0.(l3_lattices X0) \Rightarrow ((l1_lattices X0) \wedge (l2_lattices X0)) \tag{5}$$

Assume the following.

$$(v3_lattices k3_real_lat) \wedge (l3_lattices k3_real_lat) \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (l2_lattices \\ & X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0)))) \Rightarrow (m1_subset_1 (k1_lattices X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (u1_struct_0 k3_real_lat)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 k3_real_lat)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 k3_real_lat)) \Rightarrow (k1_lattices k3_real_lat X0 (k1_lattices \\ & k3_real_lat X1 X2) = k1_lattices k3_real_lat (k1_lattices k3_real_lat \\ & X0 X1) X2))) \end{aligned}$$