

## l6\_real\_lat

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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  $k2\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $g3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k2\_real\_lat : \iota$  be given. Let  $k1\_real\_lat : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (k4\_xxreal\_0 (k3\_xxreal\_0 X0 X1) X1 = X1)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 (u1\_struct\_0 k3\_real\_lat)) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k3\_real\_lat))) \Rightarrow (k2\_lattices k3\_real\_lat X0 X1 = k3\_xxreal\_0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 (u1\_struct\_0 k3\_real\_lat)) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k3\_real\_lat))) \Rightarrow (k1\_lattices k3\_real\_lat X0 X1 = k4\_xxreal\_0 X0 X1) \quad (3)$$

Assume the following.

$$(\neg v2\_struct\_0 k3\_real\_lat) \wedge (v3\_lattices k3\_real\_lat) \quad (4)$$

Assume the following.

$$v3\_membered (u1\_struct\_0 k3\_real\_lat) \quad (5)$$

Assume the following.

$$\forall X0.(l3\_lattices X0) \Rightarrow ((l1\_lattices X0) \wedge (l2\_lattices X0)) \quad (6)$$

Assume the following.

$$(v3\_lattices\ k3\_real\_lat) \wedge (l3\_lattices\ k3\_real\_lat) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0\ X0) \wedge (l1\_lattices\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (m1\_subset\_1\ (k2\_lattices\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \quad (8)$$

Assume the following.

$$k3\_real\_lat = g3\_lattices\ k1\_numbers\ k2\_real\_lat\ k1\_real\_lat \quad (9)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0\ X0) \Rightarrow (v1\_xxreal\_0\ X0) \quad (10)$$

Assume the following.

$$\forall X0. (v3\_membered\ X0) \Rightarrow (\forall X1. (m1\_subset\_1\ X1\ X0) \Rightarrow (v1\_xreal\_0\ X1)) \quad (11)$$

**Theorem 1**

$$\forall X0. (m1\_subset\_1\ X0\ (u1\_struct\_0\ k3\_real\_lat)) \Rightarrow (\forall X1. (m1\_subset\_1\ X1\ (u1\_struct\_0\ k3\_real\_lat)) \Rightarrow (k1\_lattices\ k3\_real\_lat\ (k2\_lattices\ k3\_real\_lat\ X0\ X1)\ X1 = X1))$$