

t97\_tdlat\_2 (TMQjud-  
Wrzo1j76A1yrnKkHFumQuHGWutEHo)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_tdlat\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_tdlat\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $v17\_lattices : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k8\_tdlat\_1 X0))) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k8\_tdlat\_1 X0))) \Rightarrow ( \\
& \forall X3.(m2\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k5\_tdlat\_1 \\
& X0)) \Rightarrow (\forall X4.(m2\_subset\_1 X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) \\
& (k5\_tdlat\_1 X0)) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow ((k1\_lattices (k8\_tdlat\_1 \\
& X0) X1 X2 = k4\_subset\_1 (u1\_struct\_0 X0) X3 X4) \wedge (k2\_lattices (k8\_tdlat\_1 \\
& X0) X1 X2 = k2\_pre\_topc X0 (k1\_tops\_1 X0 (k9\_subset\_1 (u1\_struct\_0 \\
& X0) X3 X4))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 (k2\_xboole\_0 X0 X1) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k2\_xboole\_0 X0 X1 = X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0))\Rightarrow(\neg v1\_xboole\_0 (k5\_tdlat\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Rightarrow(m1\_subset\_1 X2 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l3\_lattices X0)\Rightarrow((l1\_lattices X0)\wedge(l2\_lattices X0)) \quad (7)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0))\Rightarrow((\neg v2\_struct\_0 (k8\_tdlat\_1 X0))\wedge((v10\_lattices (k8\_tdlat\_1 X0))\wedge((v17\_lattices (k8\_tdlat\_1 X0))\wedge(l3\_lattices (k8\_tdlat\_1 X0)))))) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(m1\_subset\_1 (k5\_tdlat\_1 X0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_lattices X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_lattices X0 X1 X2)\Leftrightarrow(k1\_lattices X0 X1 X2 = X2)))) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_xboole\_0 X1)) \quad (11)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k8\_tdlat\_1 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k8\_tdlat\_1 X0)))\Rightarrow(\forall X3.(m2\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k5\_tdlat\_1 X0))\Rightarrow(\forall X4.(m2\_subset\_1 X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k5\_tdlat\_1 X0))\Rightarrow(((X1 = X3)\wedge(X2 = X4))\Rightarrow((r1\_lattices (k8\_tdlat\_1 X0) X1 X2)\Leftrightarrow(r1\_tarski X3 X4))))))))))$$