

t5\_tdlat\_2 (TMGx-  
UWvNgQ2TsGGLKKx6BnpMmcy94zAfGFt)

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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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarSKI : \iota \Rightarrow \iota \Rightarrow o$  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  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (r1\_tarSKI (k4\_subset\_1 (u1\_struct\_0 X0) \\ (k1\_tops\_1 X0 X1) (k1\_tops\_1 X0 X2)) (k1\_tops\_1 X0 (k4\_subset\_1 \\ (u1\_struct\_0 X0) X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarSKI X0 X1) \wedge (r1\_tarSKI X1 X2)) \Rightarrow (r1\_tarSKI X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow ((r1\_tarSKI X1 X2) \Rightarrow (r1\_tarSKI (k1\_tops\_1 \\ X0 X1) (k1\_tops\_1 X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow ((r1\_tarSKI X1 X2) \Rightarrow (r1\_tarSKI (k2\_pre\_topc \\ X0 X1) (k2\_pre\_topc X0 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (r1\_tarSKI X1 (k2\_pre\_topc X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((r1\_tarSKI X0 X1)\wedge (r1\_tarSKI X2 X3))\Rightarrow(r1\_tarSKI (k2\_xboole\_0 X0 X2) (k2\_xboole\_0 X1 X3)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarSKI X0 X1)\Rightarrow(k2\_xboole\_0 X0 X1 = X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(k1\_tops\_1 X0 (k1\_tops\_1 X0 X1) = k1\_tops\_1 X0 X1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(m1\_subset\_1 (k4\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k2\_pre\_topc X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k1\_tops\_1 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k4\_subset\_1 X0 X2 X1) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ & (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((r1\_tarski \\ & X1\ (k2\_pre\_topc\ X0\ (k1\_tops\_1\ X0\ X1)))\Rightarrow(r1\_tarski\ (k4\_subset\_1 \\ & (u1\_struct\_0\ X0)\ X1\ (k1\_tops\_1\ X0\ (k2\_pre\_topc\ X0\ X1)))\ (k2\_pre\_topc \\ & X0\ (k1\_tops\_1\ X0\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ (k1\_tops\_1\ X0 \\ & (k2\_pre\_topc\ X0\ X1)))))))))) \end{aligned}$$