

t19\_tdlat\_3  
(TMFR5XuVUFL52Q1T9K1oB1QyUP8KKwSETiZ)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_tdlat\_3 : \iota \Rightarrow o$  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  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. k4\_xboole\_0 \ k1\_xboole\_0 \ X0 = k1\_xboole\_0 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ X1)) \Leftrightarrow (r1\_tarski \ X0 \ X1) \quad (2)$$

Assume the following.

$$\forall X0. k4\_xboole\_0 \ X0 \ k1\_xboole\_0 = X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (k4\_xboole\_0 \ X0 \ X1 = k1\_xboole\_0) \Leftrightarrow (r1\_tarski \ X0 \ X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc \ X0) \wedge (l1\_pre\_topc \ X0)) \Rightarrow ((v2\_tdlat\_3 \ X0) \Leftrightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ X0))) \Rightarrow \\ & (\neg(v3\_pre\_topc \ X1 \ X0) \wedge ((X1 \neq k1\_xboole\_0) \wedge (X1 \neq u1\_struct\_0 \ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)) \Rightarrow (k3\_subset\_1 \ X0 \ (k3\_subset\_1 \ X0 \ X1) = X1) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc \ X0) \wedge (l1\_pre\_topc \ X0)) \wedge \\ & ((v3\_pre\_topc \ X1 \ X0) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ X0)))) \Rightarrow (v4\_pre\_topc \ (k3\_subset\_1 \ (u1\_struct\_0 \ X0) \ X1) \ X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \wedge \\ & ((v4\_pre\_topc\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow (v3\_pre\_topc\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X0) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (m1\_subset\_1 \\ & (k3\_subset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k3\_subset\_1 \\ & X0\ X1 = k4\_xboole\_0\ X0\ X1) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc\ X0) \Rightarrow ((v2\_tdlat\_3\ X0) \Rightarrow (v2\_pre\_topc\ X0)) \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow ((v2\_tdlat\_3 \\ & X0) \Leftrightarrow (\forall X1. (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow \\ & (\neg (v4\_pre\_topc\ X1\ X0) \wedge ((X1 \neq k1\_xboole\_0) \wedge (X1 \neq u1\_struct\_0\ X0)))) \end{aligned}$$