

t20_tops_1 (TM-
cHoq7spQiNBkzhDvUBXG1F9u1uv4sDuQR)

October 27, 2020

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 $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X2 X1)) \Rightarrow (r1_tarski (k2_xboole_0 X0 X2) X1) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 (k2_xboole_0 X0 X1) \quad (2)$$

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.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = \\ k2_xboole_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (m1_subset_1 (k4_subset_1 \\ X0 X1 X2) (k1_zfmisc_1 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k1_tops_1 X0 X1) (k1_zfmisc_1 \\ (u1_struct_0 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.(l1_pre_topc X0) \Rightarrow & (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (r1_tarski (k4_subset_1 (u1_struct_0 X0) \\ & (k1_tops_1 X0 X1) (k1_tops_1 X0 X2)) (k1_tops_1 X0 (k4_subset_1 \\ & (u1_struct_0 X0) X1 X2)))))) \end{aligned}$$