

t2\_waybel18  
(TMRskScenfA5z9LgZLdVEJbEE6FRzKy5jdK)

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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  $v1\_tops\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $k1\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.m1\_subset\_1 (k1\_tarski k1\_xboole\_0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)) \quad (1)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow ((v1\_tops\_2 (u1\_pre\_topc X0) X0) \wedge ((v1\_cantor\_1 (u1\_pre\_topc X0) X0) \wedge (m1\_subset\_1 (u1\_pre\_topc X0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \quad (2)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((u1\_pre\_topc X0 = k1\_cantor\_1 (u1\_struct\_0 X0) X1) \Leftrightarrow ((v1\_tops\_2 X1 X0) \wedge ((v1\_cantor\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))))) \quad (3)$$

Assume the following.

$$k1\_zfmisc\_1 k1\_xboole\_0 = k1\_tarski k1\_xboole\_0 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (((X2 = k7\_subset\_1 (k1\_zfmisc\_1 X0) X1 (k1\_tarski k1\_xboole\_0)) \vee (X1 = k2\_xboole\_0 X2 (k1\_tarski k1\_xboole\_0))) \Rightarrow (k1\_cantor\_1 X0 X1 = k1\_cantor\_1 X0 X2))) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2 \\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((v1\_tops\_2\ X1 \\ X0) \Rightarrow (v1\_tops\_2\ (k7\_subset\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ X1 \\ X2)\ X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (m1\_subset\_1\ (k7\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((v1\_cantor\_1\ X1\ X0) \Leftrightarrow (r1\_tarski \\ (u1\_pre\_topc\ X0)\ (k1\_cantor\_1\ (u1\_struct\_0\ X0)\ X1)))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. \\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow \\ (((v1\_tops\_2\ X1\ X0) \wedge ((v1\_cantor\_1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))) \Leftrightarrow ((v1\_tops\_2\ (k7\_subset\_1 \\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ X1\ (k1\_tarski\ k1\_xboole\_0))\ X0) \wedge \\ ((v1\_cantor\_1\ (k7\_subset\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ X1 \\ (k1\_tarski\ k1\_xboole\_0))\ X0) \wedge (m1\_subset\_1\ (k7\_subset\_1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))\ X1\ (k1\_tarski\ k1\_xboole\_0))\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))))))))) \end{aligned}$$