

## t38\_yellow\_9

(TMF<sub>x1YN5dCxt6uGojUHba5foDxH5CqLNbEE</sub>)

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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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_tops\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarSKI : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3. \\ & ((v1\_tops\_2 X3 X0) \wedge ((v1\_cantor\_1 X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((\forall X4. (m1\_subset\_1 \\ & X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (X4 \in X3) \wedge ((X1 \in X4) \wedge (r1\_xboole\_0 \\ & X4 X2)))) \Rightarrow (X1 \in k2\_pre\_topc X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow \\ & (((v1\_tops\_2 X1 X0) \wedge ((v2\_cantor\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Leftrightarrow ((v1\_tops\_2 (k2\_cantor\_1 \\ & (u1\_struct\_0 X0) X1) X0) \wedge ((v1\_cantor\_1 (k2\_cantor\_1 (u1\_struct\_0 \\ & X0) X1) X0) \wedge (m1\_subset\_1 (k2\_cantor\_1 (u1\_struct\_0 X0) X1) (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ & X0))) \Rightarrow (m1\_subset\_1 (k2\_cantor\_1 X0 X1) (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ & X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0))) \Rightarrow ((X2 = k2\_cantor\_1 X0 X1) \Leftrightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& X0)) \Rightarrow ((X3 \in X2) \Leftrightarrow (\exists X4. (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0)) \wedge ((r1\_tarski X4 X1) \wedge ((v1\_finset\_1 X4) \wedge (X3 = k8\_setfam\_1 \\
& X0 X4))))))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3. \\
& ((v1\_tops\_2 X3 X0) \wedge ((v2\_cantor\_1 X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((\forall X4. ((v1\_finset\_1 \\
& X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow \\
& (\neg (r1\_tarski X4 X3) \wedge ((X1 \in k8\_setfam\_1 (u1\_struct\_0 X0) X4) \wedge (r1\_xboole\_0 \\
& (k8\_setfam\_1 (u1\_struct\_0 X0) X4) X2)))) \Rightarrow (X1 \in k2\_pre\_topc X0 X2))))))
\end{aligned}$$