

t22\_toprealc  
(TMPnFiac4S1hm2LezZTqVvs977o48LW5gst)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_struct\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l1\_struct\_0 X0) \wedge (((\neg v2\_struct\_0 \\ & X1) \wedge (l1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X1)))) \Rightarrow ( \\ & (v1\_funct\_1 (k6\_struct\_0 X0 X1 X2)) \wedge ((v1\_funct\_2 (k6\_struct\_0 \\ & X0 X1 X2) (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 (k6\_struct\_0 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (m1\_subset\_1 ( \\ & k3\_funct\_2 X0 X1 X2 X3) X1) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 \\
& X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 X3)\Leftrightarrow \\
& (\forall X4.(m1\_subset\_1 X4 X0)\Rightarrow(k1\_funct\_1 X2 X4 = k1\_funct\_1 \\
& X3 X4))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_struct\_0 X0)\Rightarrow((v7\_struct\_0 X0)\Leftrightarrow(\forall X1.( \\
& m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0))\Rightarrow(X1 = X2))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow((v13\_struct\_0 X0 np\_1)\Rightarrow((\neg v2\_struct\_0 X0)\wedge(v7\_struct\_0 X0))) \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\forall X1. \\
& ((v13\_struct\_0 X1 np\_1)\wedge(l1\_struct\_0 X1))\Rightarrow(\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X1))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 \\
& X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow(r2\_funct\_2 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1) X3 (k6\_struct\_0 X0 X1 X2))))))
\end{aligned}$$