

t27\_topreala (TMb-  
Dcz3MMEVrUq9Tm5GJLMT38VdnArV52w3)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k3\_topmetr : \iota$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (u1\_struct\_0 (k4\_topmetr X0 X1) = k1\_rcomp\_1 X0 X1))) \quad (1)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_pre\_topc X1 X0) \Rightarrow (l1\_pre\_topc X1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow ((\neg v2\_struct\_0 (k4\_topmetr X0 X1)) \wedge ((v1\_pre\_topc (k4\_topmetr X0 X1)) \wedge (m1\_pre\_topc (k4\_topmetr X0 X1) k3\_topmetr))) \quad (3)$$

Assume the following.

$$(v2\_pre\_topc k3\_topmetr) \wedge (l1\_pre\_topc k3\_topmetr) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1))) \Rightarrow ((v1\_pre\_topc (k2\_borsuk\_1 X0 X1)) \wedge ((v2\_pre\_topc (k2\_borsuk\_1 X0 X1)) \wedge (l1\_pre\_topc (k2\_borsuk\_1 X0 X1)))) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\
& ((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1))\Rightarrow(\forall X2.((v1\_pre\_topc \\
& X2)\wedge((v2\_pre\_topc\ X2)\wedge(l1\_pre\_topc\ X2)))\Rightarrow((X2 = k2\_borsuk\_1 \\
& X0\ X1)\Leftrightarrow((u1\_struct\_0\ X2 = k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 \\
& X1))\wedge(u1\_pre\_topc\ X2 = ReplSep\ (toset\ (\lambda X3 : \iota.m1\_subset\_1 \\
& X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X2))))))\ (\lambda X3 : \iota. \\
& r1\_tarski\ X3\ (ReplSep2\ (toset\ (\lambda X4 : \iota.m1\_subset\_1\ X4\ (k1\_zfmisc\_1 \\
& (u1\_struct\_0\ X0))))\ (\lambda X4 : \iota.toset\ (\lambda X5 : \iota.m1\_subset\_1 \\
& X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))))\ (\lambda X4 : \iota.\lambda X5 : \iota. \\
& (X4 \in u1\_pre\_topc\ X0)\wedge(X5 \in u1\_pre\_topc\ X1))\ (\lambda X4 : \iota.\lambda X5 : \\
& \iota.k8\_mcart\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X4\ X5)))\ (\lambda X3 : \\
& \iota.k5\_setfam\_1\ (u1\_struct\_0\ X2)\ X3))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\
& (m1\_pre\_topc\ X1\ X0)\Rightarrow(v2\_pre\_topc\ X1))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2. \\
& (v1\_xreal\_0\ X2)\Rightarrow(\forall X3.(v1\_xreal\_0\ X3)\Rightarrow(((r1\_xxreal\_0 \\
& X0\ X1)\wedge(r1\_xxreal\_0\ X2\ X3))\Rightarrow(u1\_struct\_0\ (k2\_borsuk\_1\ (k4\_topmetr \\
& X0\ X1)\ (k4\_topmetr\ X2\ X3)) = k2\_zfmisc\_1\ (k1\_rcomp\_1\ X0\ X1)\ (k1\_rcomp\_1 \\
& X2\ X3))))))
\end{aligned}$$