

# t47\_toprealc (TMSWNCtMSgUoNjfvkt- dTG5oQpFQwpjB3Kkb)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. 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  $v3\_membered : \iota \Rightarrow o$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_toprealc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k15\_toprealc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.\forall X2.(X2 \in k2\_finseq\_1 X0) \Rightarrow (k1\_funct\_1 (k2\_finseq\_2 X0 X1) X2 = X1)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))) \Rightarrow (k4\_toprealc X0 X1 X2 = k1\_funct\_1 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0) \wedge (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (m1\_subset\_1 (k3\_funct\_2 X0 X1 X2 X3) X1) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1\ X0)\wedge \\
& ((\neg v1\_xboole\_0\ X1)\wedge((v3\_membered\ X2)\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2 \\
& X3\ X1\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X2))))))))\Rightarrow \\
& ((v1\_funct\_1\ (k15\_toprealc\ X0\ X1\ X2\ X3))\wedge((v1\_funct\_2\ (k15\_toprealc \\
& X0\ X1\ X2\ X3)\ X1\ (u1\_struct\_0\ (k15\_euclid\ X0)))\wedge(m1\_subset\_1\ (k15\_toprealc \\
& X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ (u1\_struct\_0\ (k15\_euclid \\
& X0))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow( \\
& \forall X2.(v3\_membered\ X2)\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(( \\
& v1\_funct\_2\ X3\ X1\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\
& X1\ X2))))))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ X1\ (u1\_struct\_0 \\
& (k15\_euclid\ X0)))\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\
& X1\ (u1\_struct\_0\ (k15\_euclid\ X0))))))\Rightarrow((X4 = k15\_toprealc\ X0\ X1 \\
& X2\ X3)\Leftrightarrow(\forall X5.(m1\_subset\_1\ X5\ X1)\Rightarrow(k3\_funct\_2\ X1\ (u1\_struct\_0 \\
& (k15\_euclid\ X0))\ X4\ X5 = k2\_finseq\_2\ X0\ (k3\_funct\_2\ X1\ X2\ X3\ X5))))))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0 \\
& X2)\wedge((v2\_pre\_topc\ X2)\wedge(l1\_pre\_topc\ X2)))\Rightarrow(\forall X3.(v3\_membered \\
& X3)\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (u1\_struct\_0 \\
& X2)\ X3)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0 \\
& X2)\ X3))))))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X2))\Rightarrow(( \\
& X0 \in k2\_finseq\_1\ X1)\Rightarrow(k4\_toprealc\ X1\ (k3\_funct\_2\ (u1\_struct\_0 \\
& X2)\ (u1\_struct\_0\ (k15\_euclid\ X1))\ (k15\_toprealc\ X1\ (u1\_struct\_0 \\
& X2)\ X3\ X4)\ X5)\ X0 = k3\_funct\_2\ (u1\_struct\_0\ X2)\ X3\ X4\ X5))))))
\end{aligned}$$