

t11_bvfunc11

(TMH11t4U1vCBTr5SVsP7oXfDw4VwGxpPhL3)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k6_margrel1 : \iota$ 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 $k1_bvfunc_2 : \iota \Rightarrow \iota$ be given. Let $m1_eqrel_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
 & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
 & (k1_zfmisc_1 (k1_bvfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\
 & (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow (r1_bvfunc_1 X0 (k6_bvfunc_2 X0 \\
 & X1 X2 X3) (k7_bvfunc_2 X0 X1 X2 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
 & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
 & (k1_zfmisc_1 (k1_bvfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\
 & (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow ((v2_bvfunc_2 X2 X0) \Rightarrow (r2_funct_2 \\
 & X0 k6_margrel1 (k6_bvfunc_2 X0 (k6_bvfunc_2 X0 X1 X2 X3) X2 X4) (k6_bvfunc_2 \\
 & X0 (k6_bvfunc_2 X0 X1 X2 X4) X2 X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
& k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (k1_zfmisc_1 (k1_bvf_func_2 X0))) \Rightarrow (\forall X4.(m1_eqrel_1 X4 X0) \Rightarrow \\
& ((r1_bvf_func_1 X0 X1 X2) \Rightarrow (r1_bvf_func_1 X0 (k6_bvf_func_2 X0 X1 X3 X4) \\
& (k6_bvf_func_2 X0 X2 X3 X4))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))) \wedge ((m1_subset_1 \\
& X2 (k1_zfmisc_1 (k1_bvf_func_2 X0))) \wedge (m1_eqrel_1 X3 X0)))) \Rightarrow ((v1_funct_1 \\
& (k7_bvf_func_2 X0 X1 X2 X3) \wedge ((v1_funct_2 (k7_bvf_func_2 X0 X1 X2 X3) \\
& X0 k6_margrel1) \wedge (m1_subset_1 (k7_bvf_func_2 X0 X1 X2 X3) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))) \wedge ((m1_subset_1 \\
& X2 (k1_zfmisc_1 (k1_bvf_func_2 X0))) \wedge (m1_eqrel_1 X3 X0)))) \Rightarrow ((v1_funct_1 \\
& (k6_bvf_func_2 X0 X1 X2 X3) \wedge ((v1_funct_2 (k6_bvf_func_2 X0 X1 X2 X3) \\
& X0 k6_margrel1) \wedge (m1_subset_1 (k6_bvf_func_2 X0 X1 X2 X3) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
& k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (k1_zfmisc_1 (k1_bvf_func_2 X0))) \Rightarrow (\forall X3.(m1_eqrel_1 X3 X0) \Rightarrow \\
& (\forall X4.(m1_eqrel_1 X4 X0) \Rightarrow ((v2_bvf_func_2 X2 X0) \Rightarrow (r1_bvf_func_1 \\
& X0 (k6_bvf_func_2 X0 (k6_bvf_func_2 X0 X1 X2 X3) X2 X4) (k6_bvf_func_2 X0 \\
& (k7_bvf_func_2 X0 X1 X2 X4) X2 X3))))))
\end{aligned}$$