

t7_bvfunc10 (TMXoD-
SaG8KF2cnR6BLyhTv2cRJXPWd39D5i)

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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
 & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge (\\
 & ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (\\
 & ((v1_funct_2 X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (((r1_bvfunc_1 X0 X1 X2) \wedge (\\
 & r1_bvfunc_1 X0 X2 X1)) \Rightarrow (r2_funct_2 X0 k6_margrel1 X1 X2)) \wedge (((r1_bvfunc_1 \\
 & X0 X1 X2) \wedge (r1_bvfunc_1 X0 X2 X3)) \Rightarrow (r1_bvfunc_1 X0 X1 X3)))))) \\
 & \tag{1}
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
& k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& ((v1_funct_2 X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge \\
& ((v1_funct_2 X4 X0 k6_margrel1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \Rightarrow (r1_bvfunc_1 X0 (k2_bvfunc_1 \\
& X0 (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k9_bvfunc_1 X0 X1 X3) (k9_bvfunc_1 \\
& X0 X2 X4)) (k5_bvfunc_1 X0 X1 X2)) (k1_bvfunc_1 X0 (k2_bvfunc_1 X0 \\
& X3 X4)) (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k9_bvfunc_1 \\
& X0 X3 X1) (k9_bvfunc_1 X0 X4 X2)) (k5_bvfunc_1 X0 X3 X4)) (k1_bvfunc_1 \\
& X0 (k2_bvfunc_1 X0 X1 X2)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k9_bvfunc_1 X0 X1 X2)) \wedge \\
& (v1_funct_2 (k9_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\
& (k9_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k5_bvfunc_1 X0 X1 X2)) \wedge \\
& (v1_funct_2 (k5_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\
& (k5_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k2_bvfunc_1 X0 X1 X2)) \wedge \\
& (v1_funct_2 (k2_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\
& (k2_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k1_bvfunc_1 \\ & X0 X1)) \wedge ((v1_funct_2 (k1_bvfunc_1 X0 X1) X0 k6_margrel1) \wedge (m1_subset_1 \\ & (k1_bvfunc_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X4. ((v1_funct_1 X4) \wedge \\ & ((v1_funct_2 X4 X0 k6_margrel1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (r2_funct_2 X0 k6_margrel1 \\ & (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k9_bvfunc_1 X0 \\ & X1 X3) (k9_bvfunc_1 X0 X2 X4)) (k5_bvfunc_1 X0 X1 X2)) (k1_bvfunc_1 \\ & X0 (k2_bvfunc_1 X0 X3 X4))) (k2_bvfunc_1 X0 (k2_bvfunc_1 X0 (k2_bvfunc_1 \\ & X0 (k9_bvfunc_1 X0 X3 X1) (k9_bvfunc_1 X0 X4 X2)) (k5_bvfunc_1 X0 \\ & X3 X4)) (k1_bvfunc_1 X0 (k2_bvfunc_1 X0 X1 X2)))))) \end{aligned}$$