

t8_bvfunc_9 (TM-
Pdbd3DAHjRTsiepxPqLNmbxuj7DXNm6V)

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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 $r1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_bvfunc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (r2_funct_2 X0 k6_margrel1 \\ & (k9_bvfunc_1 X0 X1 (k5_bvfunc_1 X0 X1 X2)) (k12_bvfunc_1 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((r2_funct_2 X0 k6_margrel1 \\ & (k9_bvfunc_1 X0 X1 X2) (k12_bvfunc_1 X0)) \Leftrightarrow (r1_bvfunc_1 X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
& k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& ((v1_funct_2 X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((r2_funct_2 X0 k6_margrel1 \\
& (k9_bvfunc_1 X0 X1 X2) (k12_bvfunc_1 X0)) \Rightarrow (r2_funct_2 X0 k6_margrel1 \\
& (k9_bvfunc_1 X0 (k9_bvfunc_1 X0 X2 X3) (k9_bvfunc_1 X0 X1 X3)) (k12_bvfunc_1 \\
& X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k9_bvfunc_1 X0 X1 X2)) \wedge (\\
& (v1_funct_2 (k9_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\
& (k9_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k5_bvfunc_1 X0 X1 X2)) \wedge (\\
& (v1_funct_2 (k5_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\
& (k5_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{5}$$

Theorem 1

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