

t24_bvfunc11 (TMdJyMBmJiSFhJZyoZvtFaQM- rAG5Y951yB4)

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 $r1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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. Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((m1_subset_1 \\ & X2 (k1_zfmisc_1 (k1_bvfunc_2 X0))) \wedge (m1_eqrel_1 X3 X0))) \Rightarrow ((v1_funct_1 \\ & (k7_bvfunc_2 X0 X1 X2 X3)) \wedge ((v1_funct_2 (k7_bvfunc_2 X0 X1 X2 X3) \\ & X0 k6_margrel1) \wedge (m1_subset_1 (k7_bvfunc_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((m1_subset_1 \\
& X2 (k1_zfmisc_1 (k1_bfunc_2 X0))) \wedge (m1_eqrel_1 X3 X0))) \Rightarrow ((v1_funct_1 \\
& (k6_bfunc_2 X0 X1 X2 X3)) \wedge ((v1_funct_2 (k6_bfunc_2 X0 X1 X2 X3) \\
& X0 k6_margrel1) \wedge (m1_subset_1 (k6_bfunc_2 X0 X1 X2 X3) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k6_margrel1))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
& k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (k1_zfmisc_1 (k1_bfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\
& (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow (r1_bfunc_1 X0 (k6_bfunc_2 X0 \\
& (k6_bfunc_2 X0 X1 X2 X3) X2 X4) (k7_bfunc_2 X0 (k7_bfunc_2 X0 X1 \\
& X2 X3) X2 X4))))))
\end{aligned}$$