

t23_bvfunc_2
(TMEjV1boibkF8o5kvaJQ1vCTpWZBkT81QtE)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_partit1 : \iota \Rightarrow \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_eqrel_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_bvfunc_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & \quad (k1_partit1 X0))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & \quad X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & \quad X0 k6_margrel1)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & \quad X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & \quad X0 k6_margrel1)))))) \Rightarrow (\forall X4.(m1_eqrel_1 X4 X0) \Rightarrow ((r3_bvfunc_2 \\ & \quad X0 X2 X1 X4) \Rightarrow (r2_funct_2 X0 k6_margrel1 (k6_bvfunc_2 X0 (k5_bvfunc_1 \\ & \quad X0 X2 X3) X1 X4) (k5_bvfunc_1 X0 X2 (k6_bvfunc_2 X0 X3 X1 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.k1_bvfunc_2 X0 = k1_partit1 X0 \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & \quad (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\ & \quad X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((m1_subset_1 \\ & \quad X2 (k1_zfmisc_1 (k1_bvfunc_2 X0))) \wedge (m1_eqrel_1 X3 X0))) \Rightarrow ((v1_funct_1 \\ & \quad (k6_bvfunc_2 X0 X1 X2 X3) \wedge ((v1_funct_2 (k6_bvfunc_2 X0 X1 X2 X3) \\ & \quad X0 k6_margrel1) \wedge (m1_subset_1 (k6_bvfunc_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & \quad (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \tag{3}$$

Assume the following.

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

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_partit1 X0))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 X0 k6_margrel1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k6_margrel1)))))) \Rightarrow (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow ((r3_bvfunc_2 \\
& X0 X2 X1 X4) \Rightarrow (r2_funct_2 X0 k6_margrel1 (k6_bvfunc_2 X0 (k5_bvfunc_1 \\
& X0 X3 X2) X1 X4) (k5_bvfunc_1 X0 (k6_bvfunc_2 X0 X3 X1 X4) X2))))))
\end{aligned}$$