

t73_bvfunc11

(TMdQnB6zQrbnLbiehoMrhaz6qEUi3LPfurv)

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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 $k1_bvfunc_2 : \iota \Rightarrow \iota$ 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 $k7_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
 & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
 & (k1_zfmisc_1 (k1_bvfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\
 & (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow (r2_funct_2 X0 k6_margrel1 (k1_bvfunc_1 \\
 & X0 (k6_bvfunc_2 X0 (k6_bvfunc_2 X0 X1 X2 X3) X2 X4)) (k7_bvfunc_2 \\
 & X0 (k7_bvfunc_2 X0 (k1_bvfunc_1 X0 X1) X2 X3) X2 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\
 & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
 & (k1_zfmisc_1 (k1_bvfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\
 & (\forall X4. (m1_eqrel_1 X4 X0) \Rightarrow ((v2_bvfunc_2 X2 X0) \Rightarrow (r2_funct_2 \\
 & X0 k6_margrel1 (k1_bvfunc_1 X0 (k6_bvfunc_2 X0 (k6_bvfunc_2 X0 \\
 & X1 X2 X3) X2 X4)) (k7_bvfunc_2 X0 (k1_bvfunc_1 X0 (k6_bvfunc_2 X0 \\
 & X1 X2 X4)) X2 X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k6_margrel1)))))) \Rightarrow (r1_bvfunc_1 X0 X1 X1) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((m1_subset_1 \\ & X2 (k1_zfmisc_1 (k1_bvfunc_2 X0))) \wedge (m1_eqrel_1 X3 X0))) \Rightarrow ((v1_funct_1 \\ & (k7_bvfunc_2 X0 X1 X2 X3) \wedge ((v1_funct_2 (k7_bvfunc_2 X0 X1 X2 X3) \\ & X0 k6_margrel1) \wedge (m1_subset_1 (k7_bvfunc_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((m1_subset_1 \\ & X2 (k1_zfmisc_1 (k1_bvfunc_2 X0))) \wedge (m1_eqrel_1 X3 X0))) \Rightarrow ((v1_funct_1 \\ & (k6_bvfunc_2 X0 X1 X2 X3) \wedge ((v1_funct_2 (k6_bvfunc_2 X0 X1 X2 X3) \\ & X0 k6_margrel1) \wedge (m1_subset_1 (k6_bvfunc_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k1_bvfunc_1 \\ & X0 X1)) \wedge ((v1_funct_2 (k1_bvfunc_1 X0 X1) X0 k6_margrel1) \wedge (m1_subset_1 \\ & (k1_bvfunc_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (k1_bfunc_2 X0))) \Rightarrow (\forall X3.(m1_eqrel_1 X3 X0) \Rightarrow \\ & (\forall X4.(m1_eqrel_1 X4 X0) \Rightarrow ((v2_bfunc_2 X2 X0) \Rightarrow (r1_bfunc_1 \\ & X0 (k7_bfunc_2 X0 (k7_bfunc_2 X0 (k1_bfunc_1 X0 X1) X2 X3) X2 X4) \\ & (k7_bfunc_2 X0 (k1_bfunc_1 X0 (k6_bfunc_2 X0 X1 X2 X4) X2 X3))))))) \end{aligned}$$