

t20_bvfunc_1 (TMGmN-
fWAuMM9wqV546Dz48pUgdo7yw6TAxX)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_margrel1 : \iota$ be given. Let $k13_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_bvfunc_1 : \iota \Rightarrow \iota$ be given. Let $k12_bvfunc_1 : \iota \Rightarrow \iota$ be given. Let $k14_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_margrel1 : \iota$ be given. Let $k2_xboolean : \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_margrel1 : \iota$ be given. Assume the following.

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

Assume the following.

$$k8_margrel1 = k2_xboolean \tag{2}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow ((v1_funct_1 (k11_bvfunc_1 X0)) \wedge \\ & ((v1_funct_2 (k11_bvfunc_1 X0) X0 k6_margrel1) \wedge (m1_subset_1 \\ & (k11_bvfunc_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (((\forall X2.(m1_subset_1 \\ X2 X0) \Rightarrow (k3_funct_2 X0 k6_margrel1 X1 X2 = k7_margrel1)) \Rightarrow (k14_bvfunc_1 \\ X0 X1 = k11_bvfunc_1 X0)) \wedge ((\neg \forall X2.(m1_subset_1 X2 X0) \Rightarrow (k3_funct_2 \\ X0 k6_margrel1 X1 X2 = k7_margrel1)) \Rightarrow (k14_bvfunc_1 X0 X1 = k12_bvfunc_1 \\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (((\forall X2.(m1_subset_1 \\ X2 X0) \Rightarrow (k3_funct_2 X0 k6_margrel1 X1 X2 = k8_margrel1)) \Rightarrow (k13_bvfunc_1 \\ X0 X1 = k12_bvfunc_1 X0)) \wedge ((\neg \forall X2.(m1_subset_1 X2 X0) \Rightarrow (k3_funct_2 \\ X0 k6_margrel1 X1 X2 = k8_margrel1)) \Rightarrow (k13_bvfunc_1 X0 X1 = k11_bvfunc_1 \\ X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((X1 = k12_bvfunc_1 X0) \Leftrightarrow (\forall X2. \\ (m1_subset_1 X2 X0) \Rightarrow (k3_funct_2 X0 k6_margrel1 X1 X2 = k8_margrel1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow ((X1 = k11_bvfunc_1 X0) \Leftrightarrow (\forall X2. \\ (m1_subset_1 X2 X0) \Rightarrow (k3_funct_2 X0 k6_margrel1 X1 X2 = k7_margrel1)))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (((r2_funct_2 X0 k6_margrel1 (k13_bvfunc_1 \\ X0 (k11_bvfunc_1 X0)) (k11_bvfunc_1 X0)) \wedge ((r2_funct_2 X0 k6_margrel1 \\ (k13_bvfunc_1 X0 (k12_bvfunc_1 X0)) (k12_bvfunc_1 X0)) \wedge ((r2_funct_2 \\ X0 k6_margrel1 (k14_bvfunc_1 X0 (k11_bvfunc_1 X0)) (k11_bvfunc_1 \\ X0)) \wedge (r2_funct_2 X0 k6_margrel1 (k14_bvfunc_1 X0 (k12_bvfunc_1 \\ X0)) (k12_bvfunc_1 X0)))))) \end{aligned}$$