

l10_bvfunc_3

(TMH5xZTNwZhMVNr7UBhH28Kt8RjDbt93S4p)

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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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k8_margrel1 : \iota$ be given. Let $k15_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_bvfunc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xboolean : \iota$ be given. Let $k7_margrel1 : \iota$ be given. Let $k1_xboolean : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k16_bvfunc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\neg v1_xboole_0 \ np_1 \tag{1}$$

Assume the following.

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

Assume the following.

$$k7_margrel1 = k1_xboolean \tag{3}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{4}$$

Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 \ X0) \wedge ((m1_eqrel_1 \\ & X1 \ X0) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k1_bvfunc_2 \ X0)))))) \Rightarrow (m1_eqrel_1 \\ & (k5_bvfunc_2 \ X0 \ X1 \ X2) \ X0) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k6_margrel1)))))) \Rightarrow ((v1_funct_1 (k5_bvfunc_1 X0 X1 X2)) \wedge (\\ & (v1_funct_2 (k5_bvfunc_1 X0 X1 X2) X0 k6_margrel1) \wedge (m1_subset_1 \\ & (k5_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \wedge (m1_eqrel_1 X2 X0)) \Rightarrow ((v1_funct_1 \\ & (k16_bvfunc_1 X0 X1 X2)) \wedge ((v1_funct_2 (k16_bvfunc_1 X0 X1 X2) X0 \\ & k6_margrel1) \wedge (m1_subset_1 (k16_bvfunc_1 X0 X1 X2) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k16_bvfunc_2 X0))) \Rightarrow (\forall X3. (m1_eqrel_1 X3 X0) \Rightarrow \\ & (k6_bvfunc_2 X0 X1 X2 X3 = k16_bvfunc_1 X0 X1 (k5_bvfunc_2 X0 X3 X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$k2_xboolean = np_1 \quad (10)$$

Assume the following.

$$k1_xboolean = k6_numbers \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2. (m1_eqrel_1 X2 X0) \Rightarrow \\ & (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 k6_margrel1) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow \\ & ((X3 = k16_bvfunc_1 X0 X1 X2) \Leftrightarrow (\forall X4. (m1_subset_1 X4 X0) \Rightarrow (\\ & ((\forall X5. (m1_subset_1 X5 X0) \Rightarrow ((X5 \in k15_bvfunc_1 X0 X4 X2) \Rightarrow \\ & (k3_funct_2 X0 k6_margrel1 X1 X5 = k8_margrel1))) \Rightarrow (k3_funct_2 \\ & X0 k6_margrel1 X3 X4 = k8_margrel1)) \wedge ((\exists X5. (m1_subset_1 \\ & X5 X0) \wedge ((X5 \in k15_bvfunc_1 X0 X4 X2) \wedge (k3_funct_2 X0 k6_margrel1 \\ & X1 X5 \neq k8_margrel1))) \Rightarrow (k3_funct_2 X0 k6_margrel1 X3 X4 = k7_margrel1)))))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 X0 k6_margrel1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (\\ & k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 k6_margrel1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k6_margrel1)))))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k1_zfmisc_1 (k1_bvfunc_2 X0))) \Rightarrow (\forall X4.(m1_eqrel_1 X4 X0) \Rightarrow \\ & (\forall X5.(m1_subset_1 X5 X0) \Rightarrow ((k3_funct_2 X0 k6_margrel1 (\\ & k6_bvfunc_2 X0 (k5_bvfunc_1 X0 X1 X2) X3 X4) X5 = k8_margrel1) \Rightarrow (\forall X6. \\ & (m1_subset_1 X6 X0) \Rightarrow ((X6 \in k15_bvfunc_1 X0 X5 (k5_bvfunc_2 X0 X4 \\ & X3)) \Rightarrow (k3_funct_2 X0 k6_margrel1 (k5_bvfunc_1 X0 X1 X2) X6 = k8_margrel1)))))))))) \end{aligned}$$