

t61_bvfunc_1

(TMW42pXdRZhWKwSHARE6iLpUovEA1vFRhmh)

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Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboolean : \iota \Rightarrow \iota$ be given. Let $k8_margrel1 : \iota$ be given. Let $k7_margrel1 : \iota$ be given. Let $k2_xboolean : \iota$ be given. Let $k1_xboolean : \iota$ be given. Let $np_1 : \iota$ be given. Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k4_xboolean X0 (k5_xboolean X0 X1) = X0)) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k5_xboolean X0 (k9_xboolean X0 X1) = k6_xboolean X1 X0)) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k9_xboolean X0 (k4_xboolean X0 X1) = k3_xboolean X0)) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k4_xboolean X0 (k4_xboolean X0 X1) = k4_xboolean X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k5_xboolean (k3_xboolean X0) (k6_xboolean X0 X1) = k6_xboolean X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k6_xboolean X0 (k6_xboolean X0 X1) = k6_xboolean X0 X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow ((\\ (k4_xboolean\ X0\ X1 = k8_margrel1) \Rightarrow ((X0 = k8_margrel1) \wedge (X1 = k8_margrel1))) \wedge \\ (((X0 = k8_margrel1) \wedge (X1 = k8_margrel1)) \Rightarrow (k4_xboolean\ X0\ X1 = \\ k8_margrel1)) \wedge ((\neg(k4_xboolean\ X0\ X1 = k7_margrel1) \wedge ((X0 \neq k7_margrel1) \wedge \\ (X1 \neq k7_margrel1))) \wedge (((X0 = k7_margrel1) \vee (X1 = k7_margrel1)) \Rightarrow \\ (k4_xboolean\ X0\ X1 = k7_margrel1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow (k5_xboolean\ X0\ (k6_xboolean\ X0\ X1) = k2_xboolean)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xboolean\ X0) \Rightarrow (((X0 = k7_margrel1) \Rightarrow (k3_xboolean\ X0 = k8_margrel1)) \wedge (((k3_xboolean\ X0 = k8_margrel1) \Rightarrow (X0 = k7_margrel1)) \wedge \\ (((X0 = k8_margrel1) \Rightarrow (k3_xboolean\ X0 = k7_margrel1)) \wedge ((k3_xboolean\ X0 = k7_margrel1) \Rightarrow (X0 = k8_margrel1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow ((k3_xboolean\ X0 = k2_xboolean) \Rightarrow (k6_xboolean\ X0\ X1 = k2_xboolean))) \quad (10)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (k6_xboolean\ (k6_xboolean\ (k3_xboolean\ X0)\ X0) = k2_xboolean) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow ((\\ (k6_xboolean\ X0\ X1 = k2_xboolean) \wedge (k6_xboolean\ X1\ X0 = k2_xboolean)) \Rightarrow \\ (X0 = X1))) \end{aligned} \quad (12)$$

Assume the following.

$$k8_margrel1 = k2_xboolean \quad (13)$$

Assume the following.

$$\exists X0.v1_xboolean\ X0 \quad (14)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (k3_xboolean\ (k3_xboolean\ X0) = X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean\ X0) \wedge (v1_xboolean\ X1)) \Rightarrow (v1_xboolean\ (k6_xboolean\ X0\ X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean\ X0)\wedge(v1_xboolean\ X1))\Rightarrow(v1_xboolean\ (k4_xboolean\ X0\ X1)) \quad (17)$$

Assume the following.

$$v1_xboolean\ k2_xboolean \quad (18)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0)\Rightarrow(v1_xboolean\ (k3_xboolean\ X0)) \quad (19)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0)\Leftrightarrow((X0 = k1_xboolean)\vee(X0 = k2_xboolean)) \quad (20)$$

Assume the following.

$$k2_xboolean = np_1 \quad (21)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0)\Rightarrow(\forall X1.(v1_xboolean\ X1)\Rightarrow((r1_xxreal_0\ X0\ X1)\Leftrightarrow(k6_xboolean\ X0\ X1 = k8_margrel1))) \quad (22)$$

Theorem 1

$$\forall X0.(v1_xboolean\ X0)\Rightarrow(\forall X1.(v1_xboolean\ X1)\Rightarrow(\forall X2.(v1_xboolean\ X2)\Rightarrow((r1_xxreal_0\ X0\ (k6_xboolean\ X1\ X2))\Leftrightarrow(r1_xxreal_0\ (k4_xboolean\ X0\ X1\ X2))))))$$