

t113_xboolean
(TMM1PY2i5P6UsZ65Z3KB1kPffpjCJpve129)

October 27, 2020

Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $k6_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboolean : \iota$ be given. Let $k5_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboolean : \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k4_xboolean X0 (k6_xboolean X0 X1) = k4_xboolean X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (\forall X2.(v1_xboolean X2) \Rightarrow (k6_xboolean (k6_xboolean (k6_xboolean X0 X1) X2) (k6_xboolean X1 X2) = k2_xboolean))) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (k6_xboolean X0 X0 = k2_xboolean) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean X0) \wedge (v1_xboolean X1)) \Rightarrow (k4_xboolean X0 X0 = X0) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (v1_xboolean (k3_xboolean X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow (k6_xboolean\ X0\ X1 = k5_xboolean\ (k3_xboolean\ X0)\ X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean\ X0) \wedge (v1_xboolean\ X1)) \Rightarrow (k4_xboolean\ X0\ X1 = k4_xboolean\ X1\ X0) \quad (9)$$

Theorem 1

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow (\forall X2.(v1_xboolean\ X2) \Rightarrow ((k6_xboolean\ X0\ X1 = k2_xboolean) \Rightarrow (k6_xboolean\ X1\ X2)\ (k6_xboolean\ X0\ X2) = k2_xboolean))))$$