

t33_xboolean
(TMdqke4SekRxn2HNsQLwJBTa7BGVSWdnU4G)

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Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $k9_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

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

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (k3_xboolean (k3_xboolean X0) = X0) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean X0) \wedge (v1_xboolean X1)) \Rightarrow (v1_xboolean (k5_xboolean X0 X1)) \quad (3)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k5_xboolean X0 X1 = k3_xboolean (k4_xboolean (k3_xboolean X0) (k3_xboolean X1)))) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k9_xboolean X0 X1 = k3_xboolean (k5_xboolean X0 X1))) \quad (7)$$

Assume the following.

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

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

$$\forall X0.(v1_xboolean\ X0)\Rightarrow(\forall X1.(v1_xboolean\ X1)\Rightarrow(k9_xboolean\ X0\ (k5_xboolean\ X0\ X1) = k4_xboolean\ (k3_xboolean\ X0)\ (k3_xboolean\ X1)))$$